

FIG.1

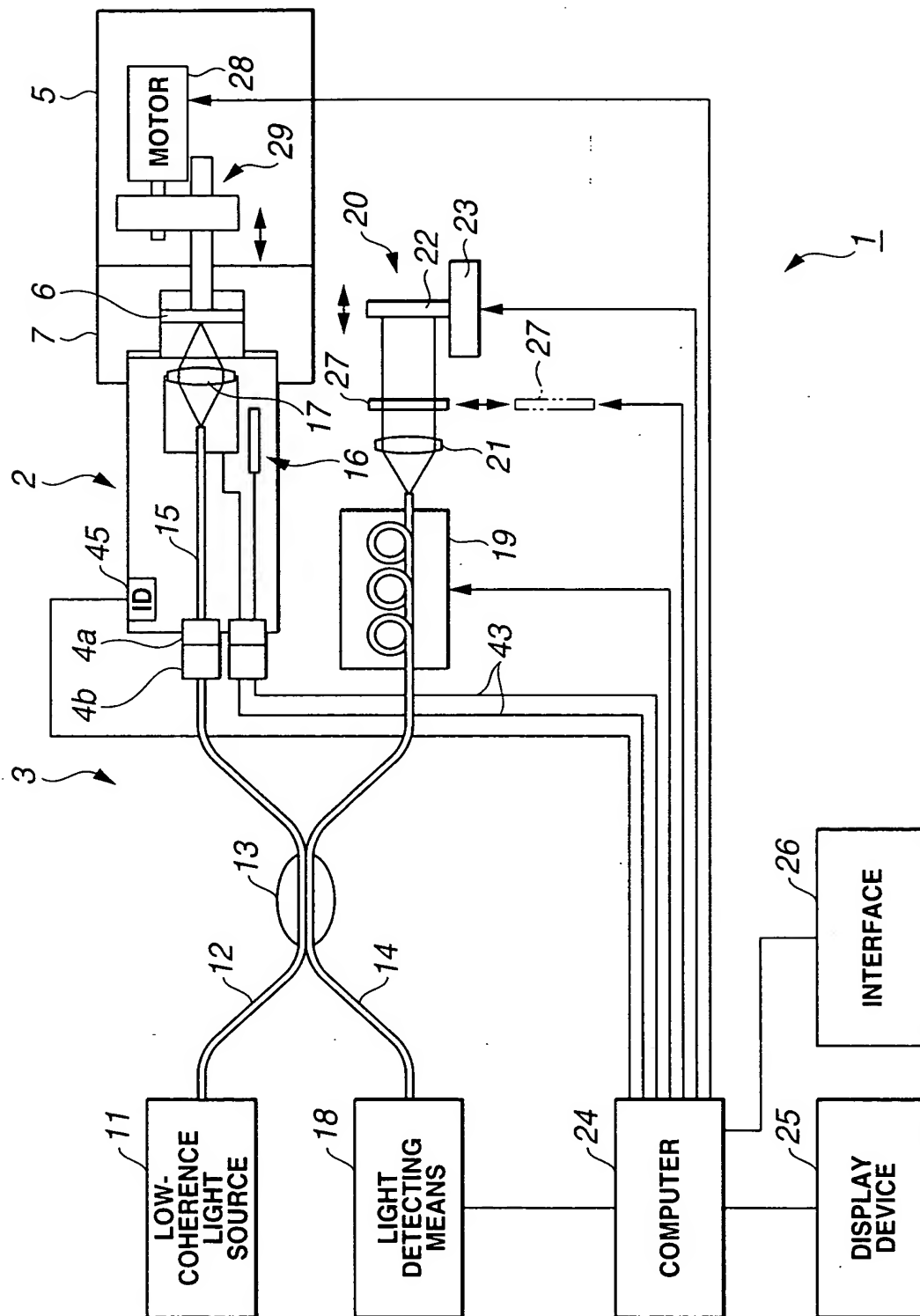


FIG.2

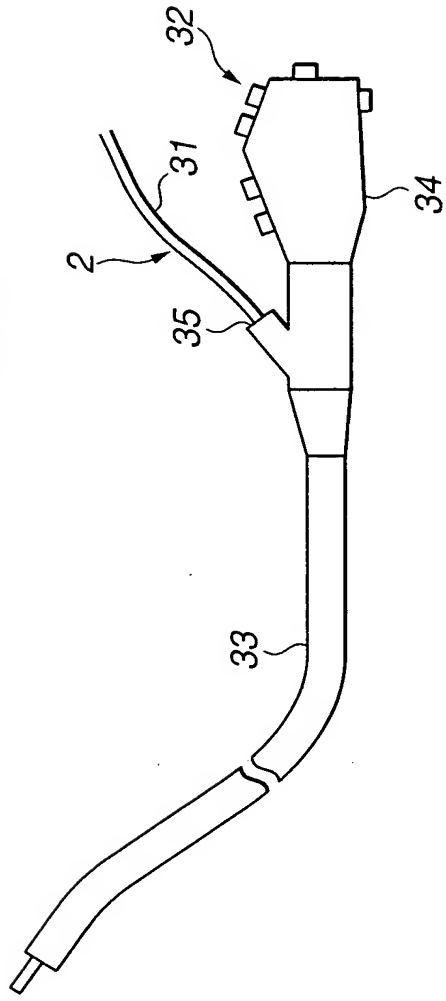


FIG.3

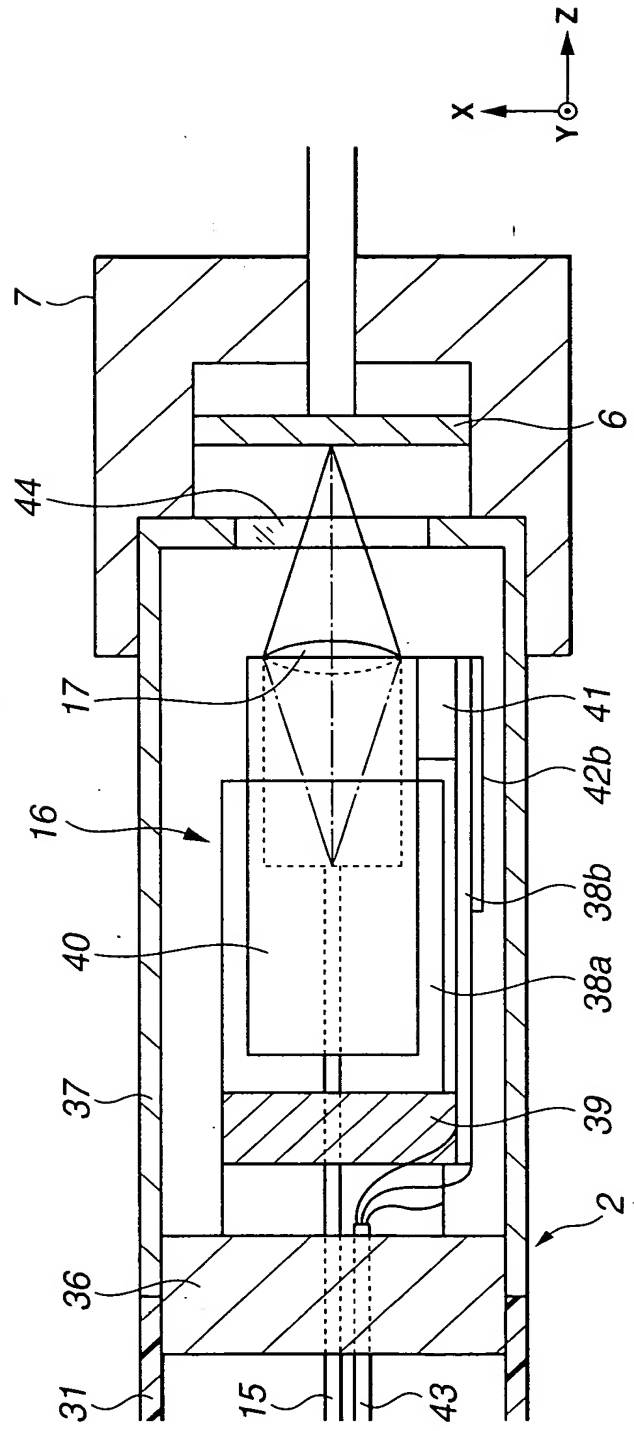


FIG.4A

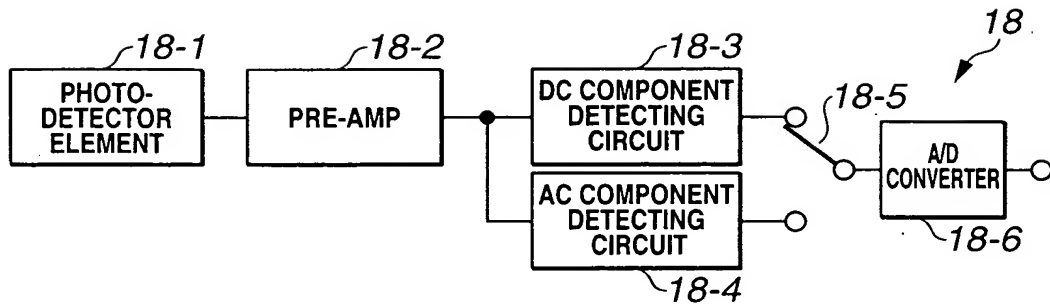


FIG.4B

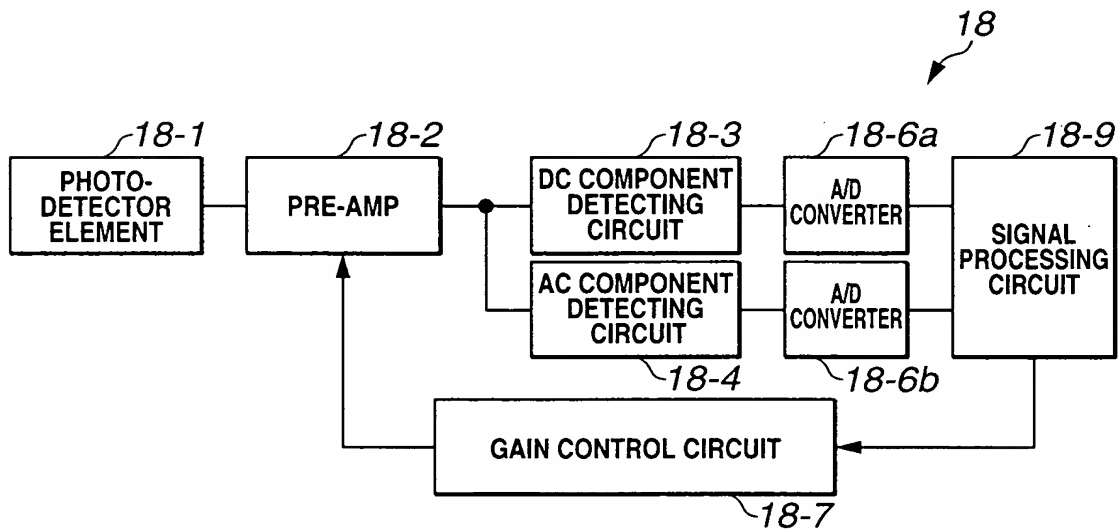


FIG.4C

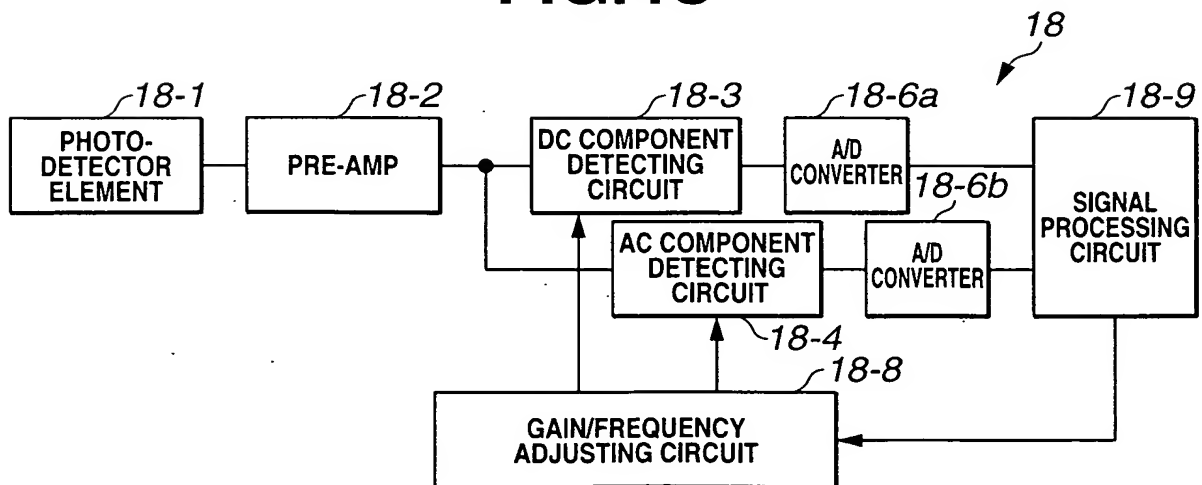


FIG.5

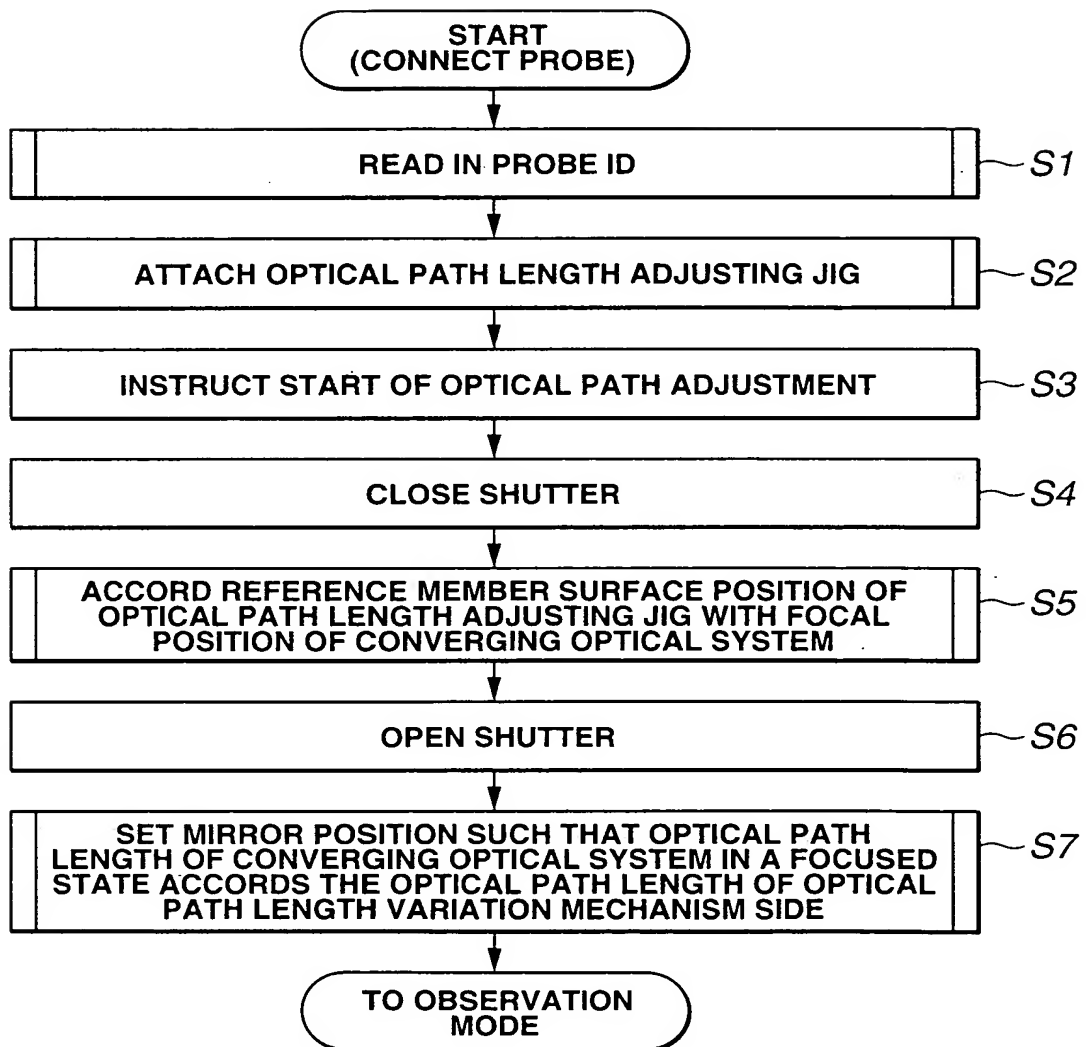


FIG.6

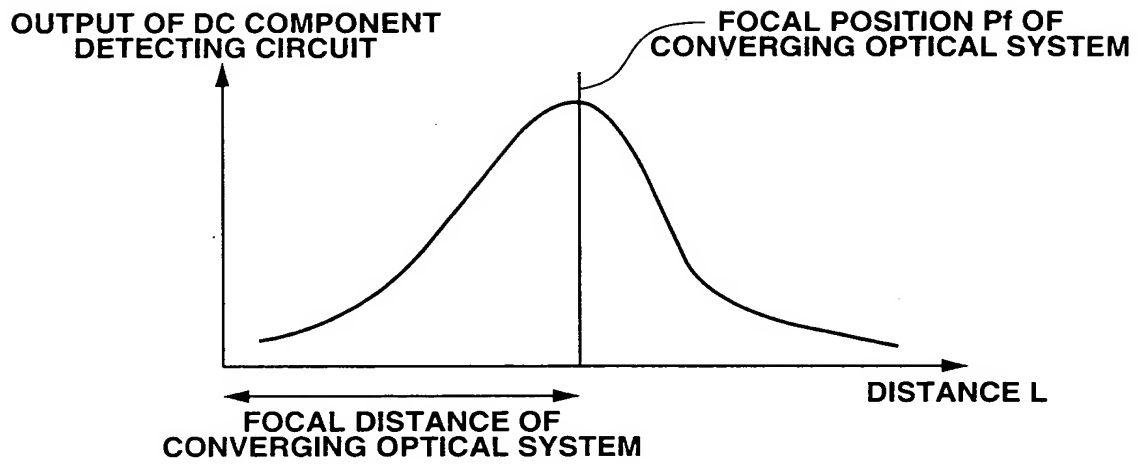


FIG.7A

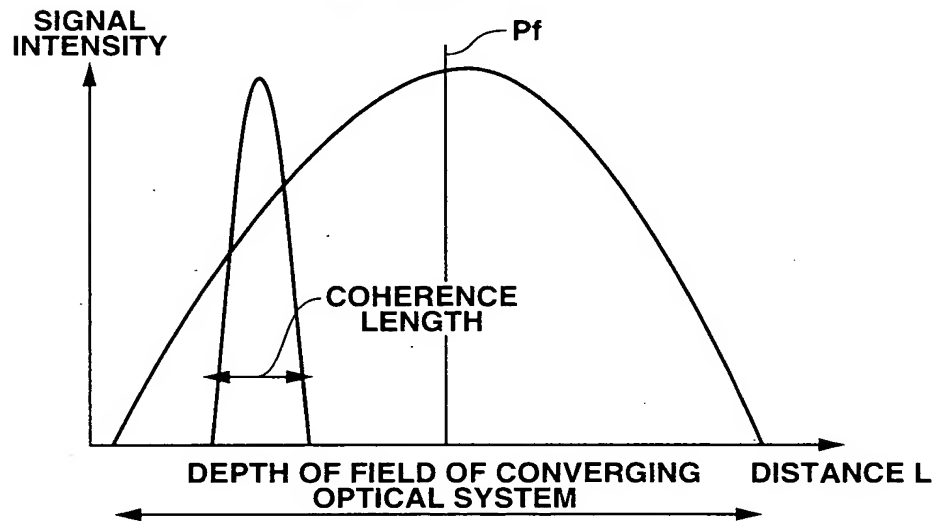


FIG.7B

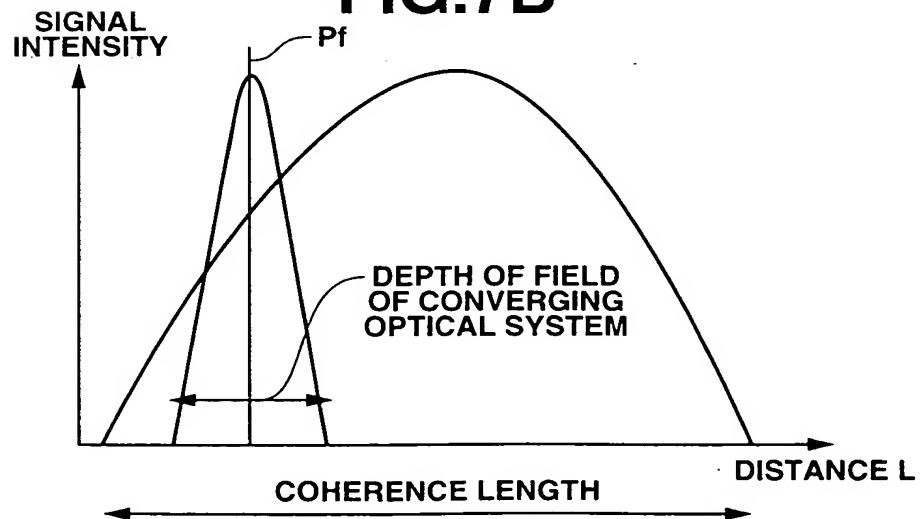


FIG. 8

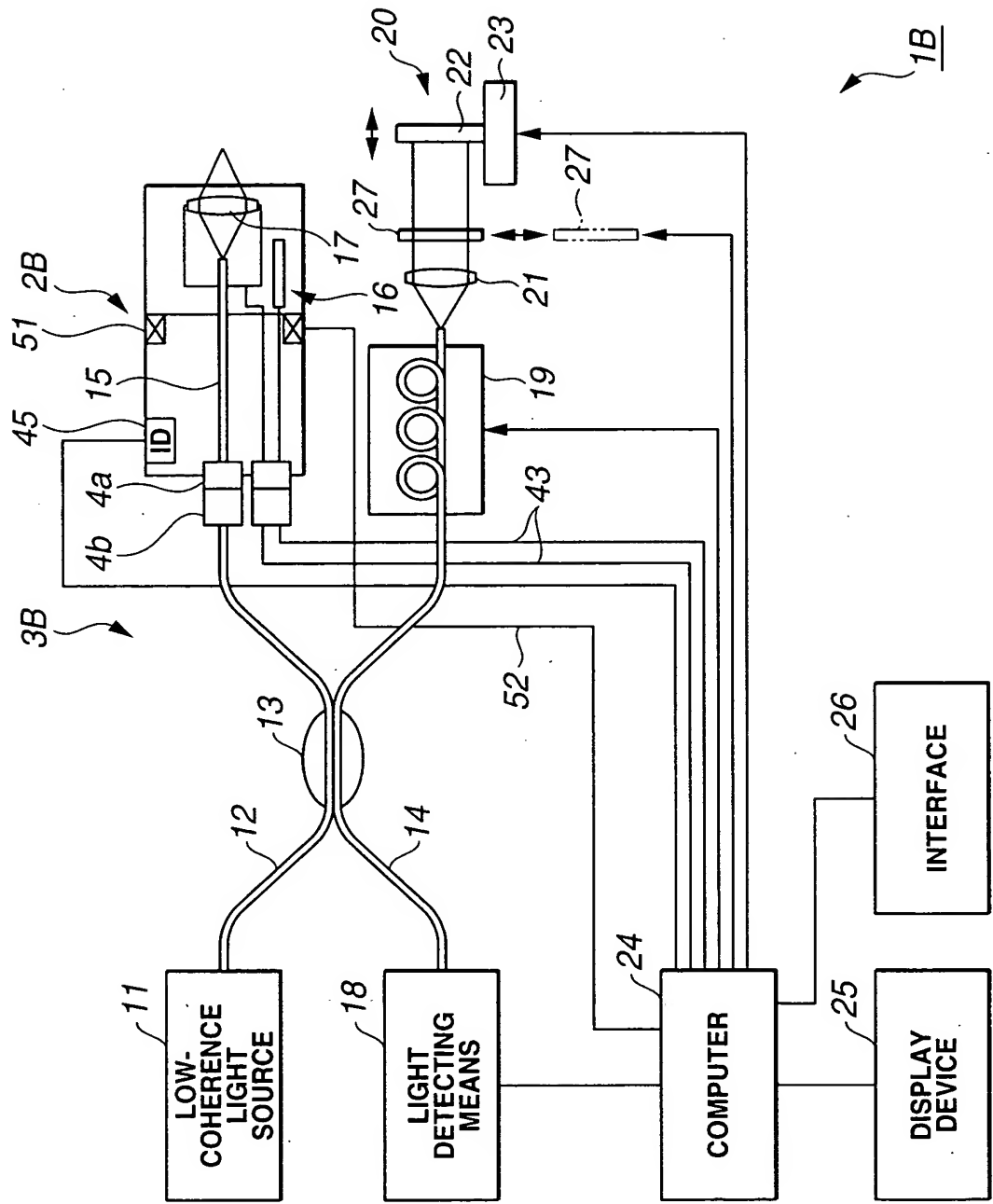


FIG. 9A

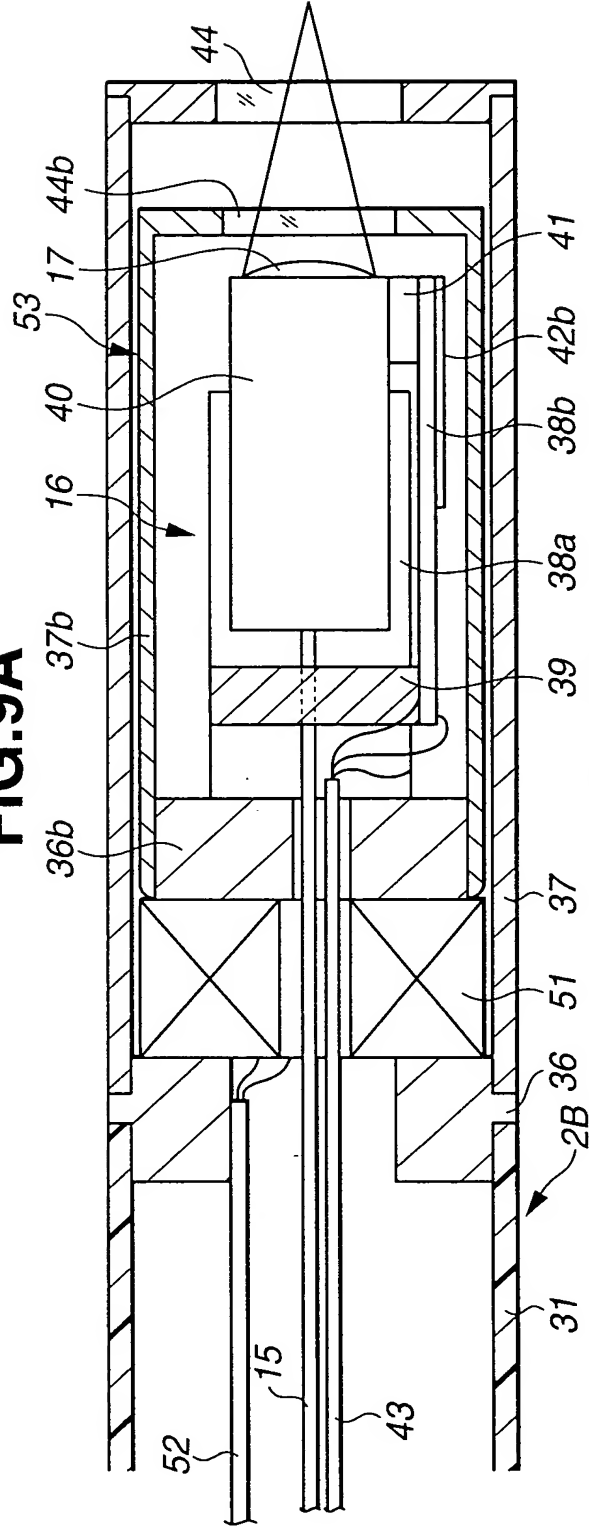


FIG. 9B

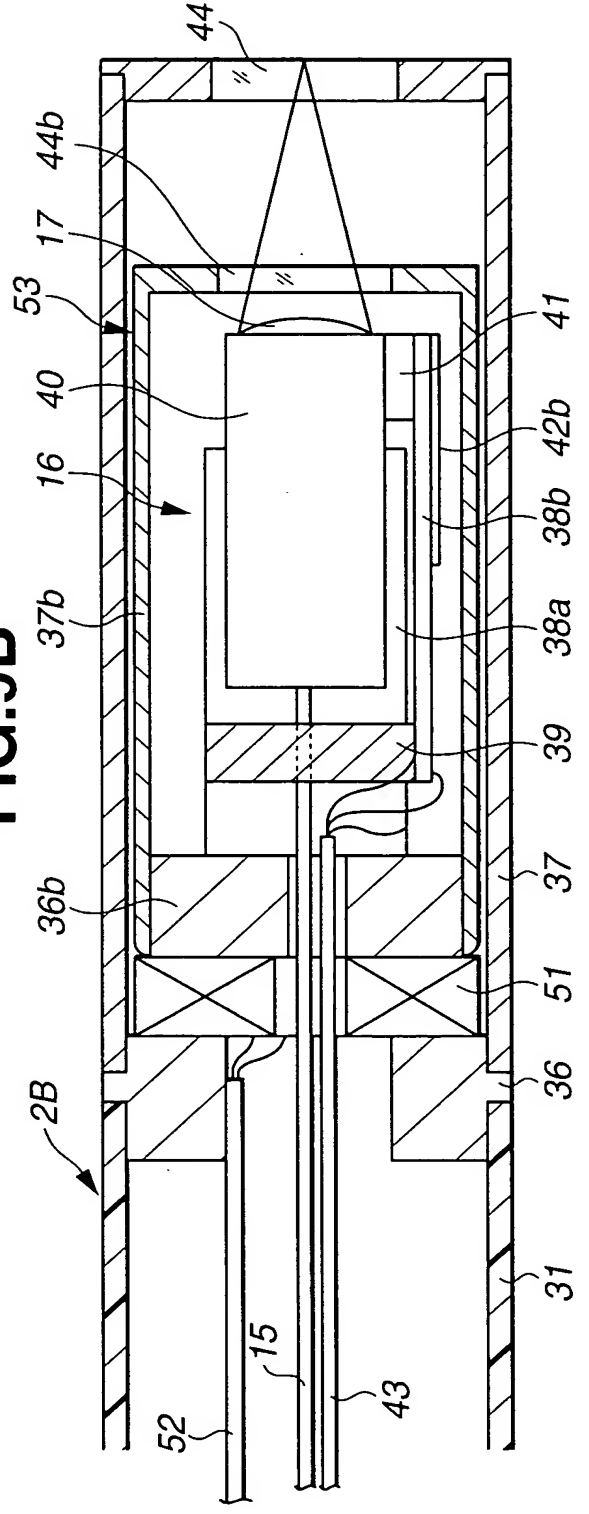


FIG.10

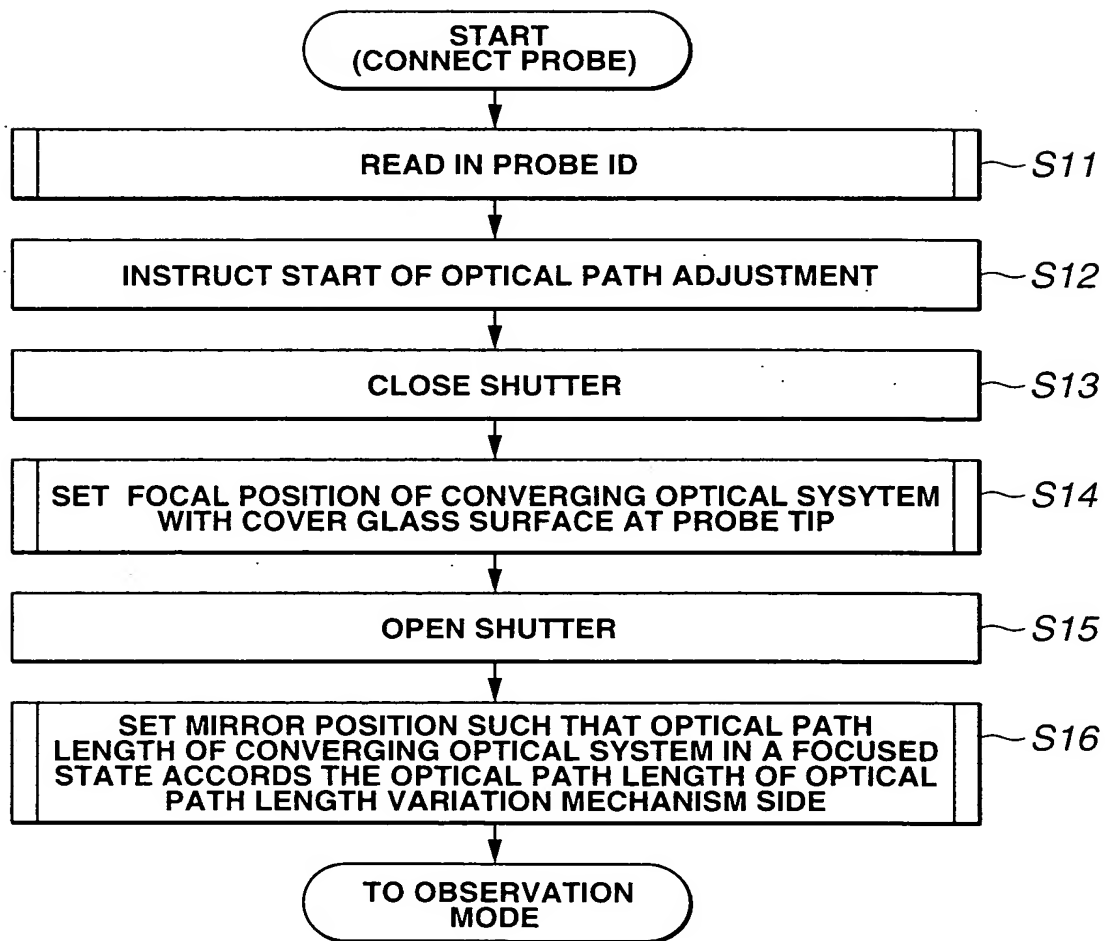


FIG.11

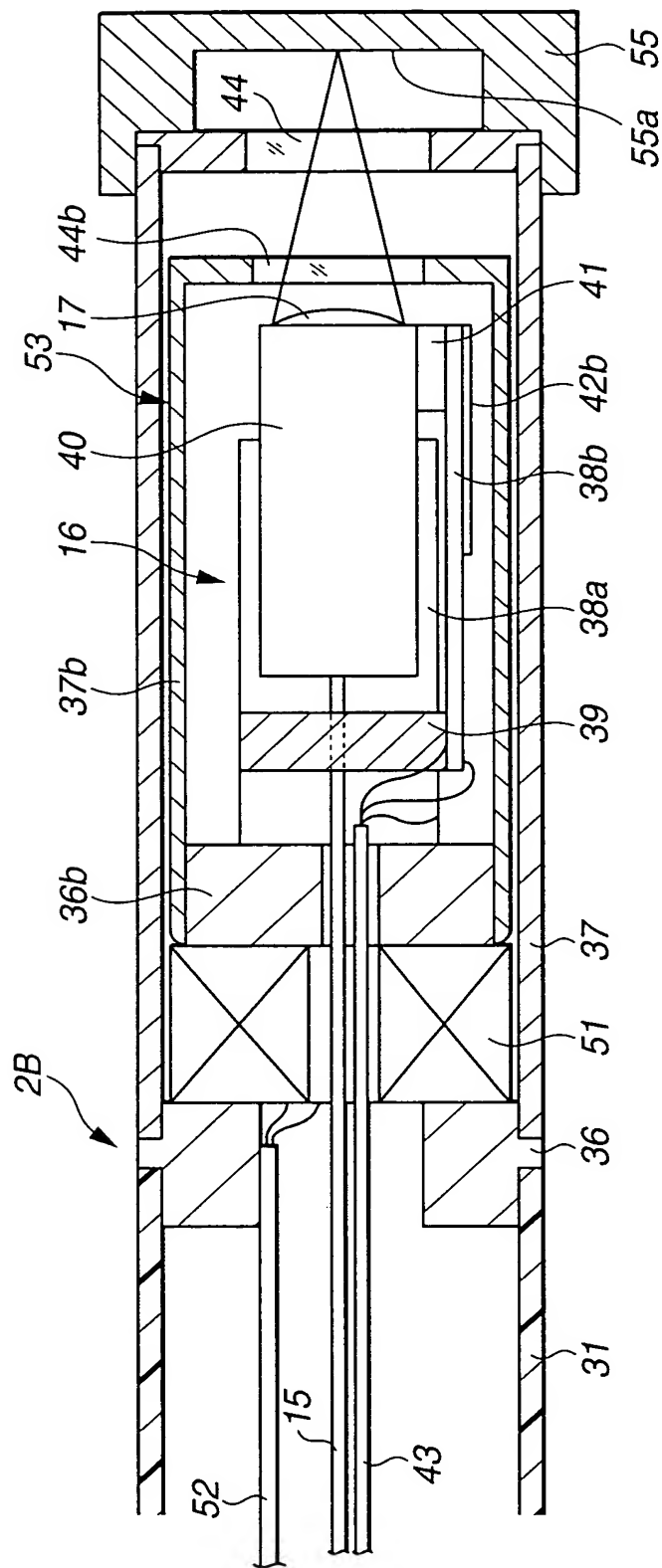


FIG. 12

FIG. 12 is a schematic diagram of a system for measuring the thickness of a substrate. The system includes a low-coherence light source (11) connected via a beam splitter (12) to a light detecting means (18). The light detecting means is connected to a computer (24). The computer is also connected to a motor driver (64), which controls a motor (62) with an encoder (63). The motor drives a Z-driving cam (61) that moves a probe (20) vertically. The probe is positioned above a substrate (23) and is connected to a light source (19) and a detector (21). The system also includes an interface (26) and a display device (25).

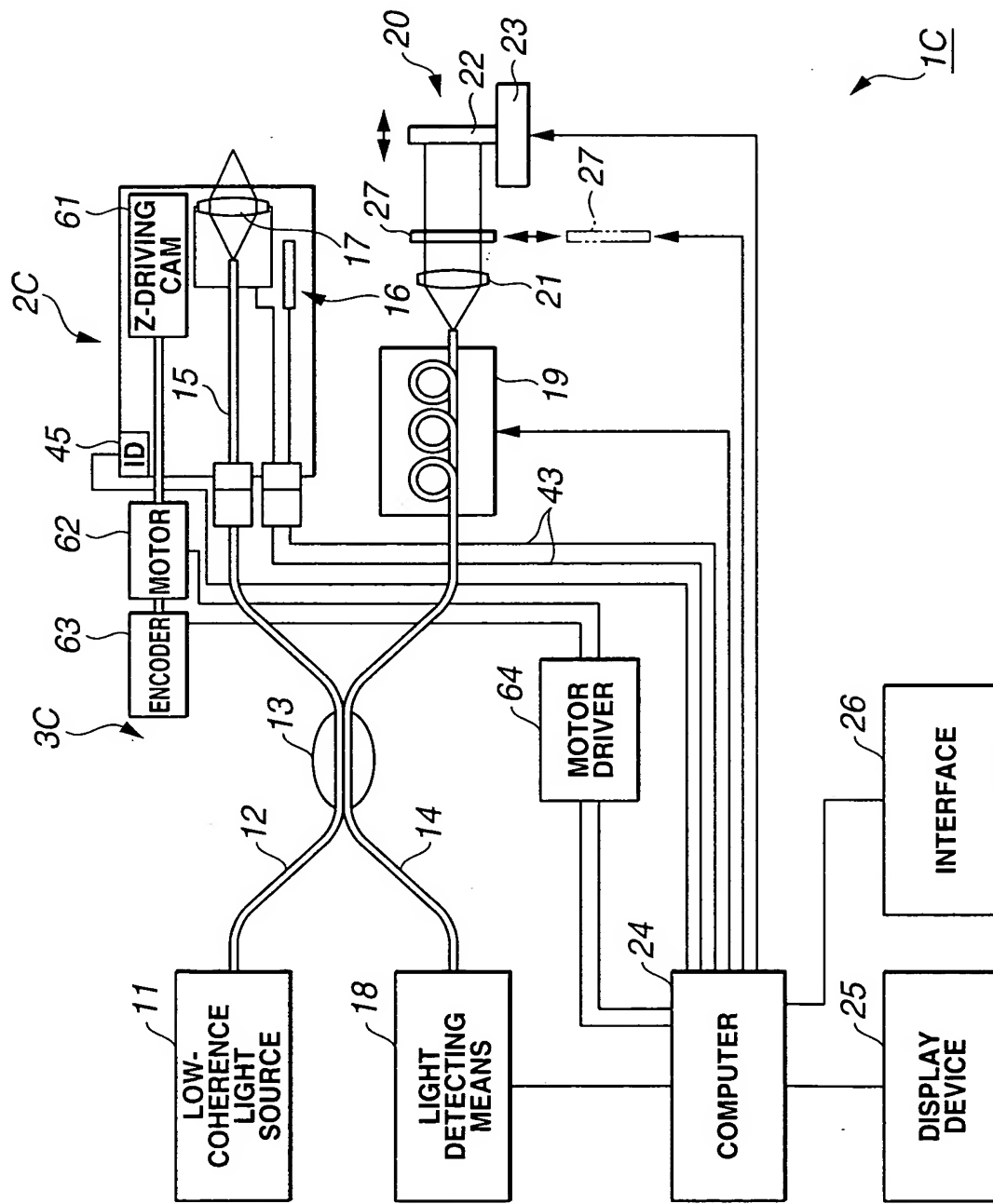


FIG.13

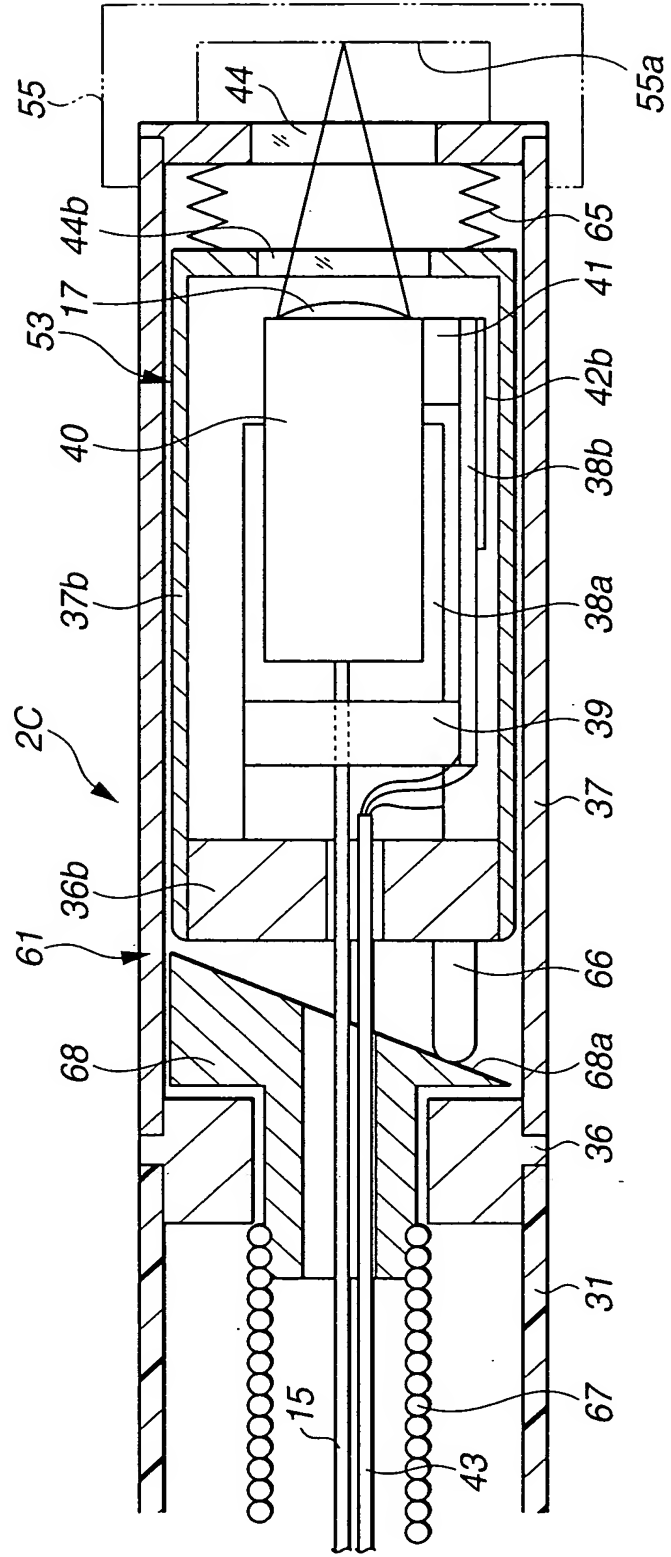


FIG.14

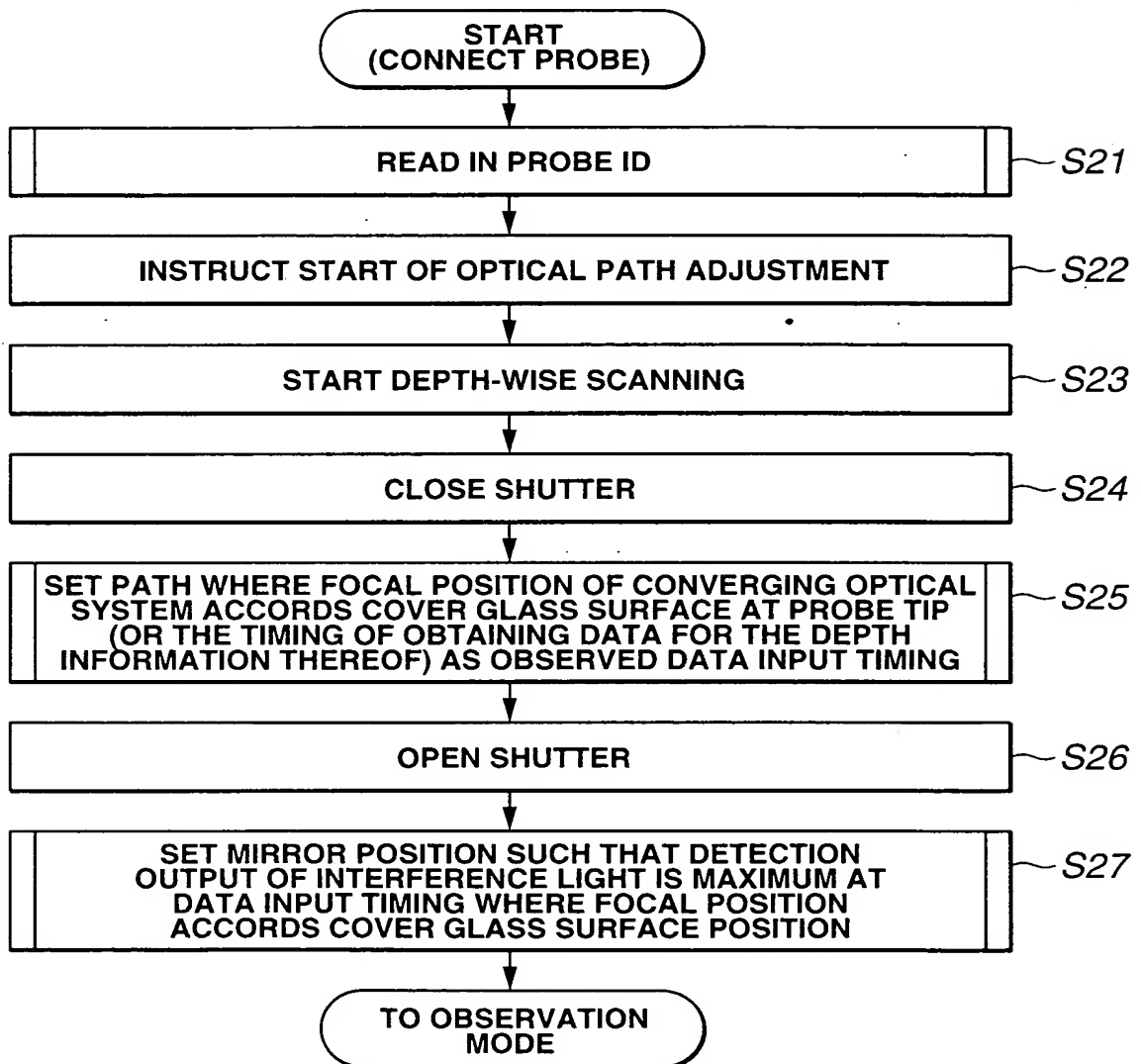


FIG.15

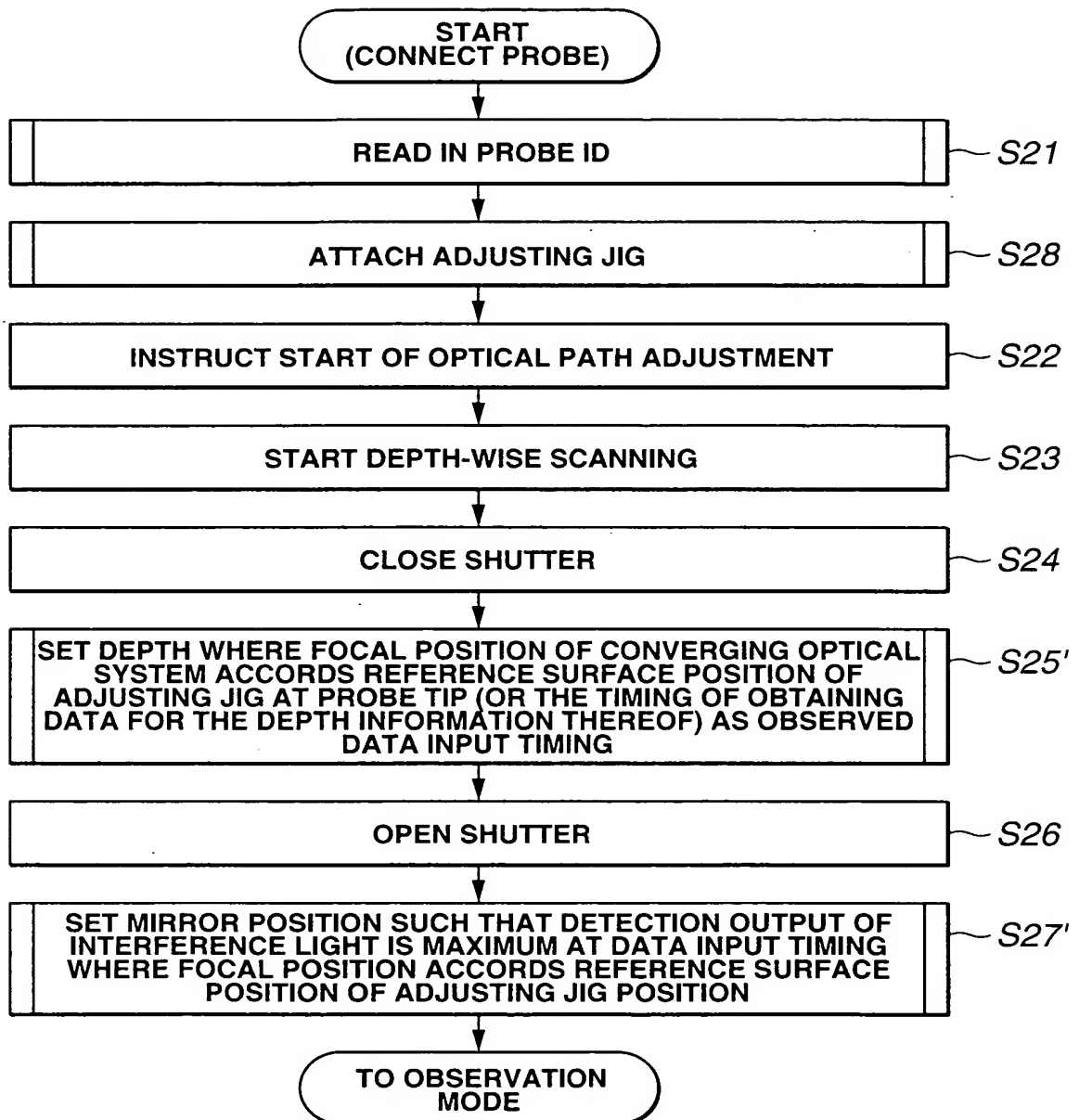


FIG. 16

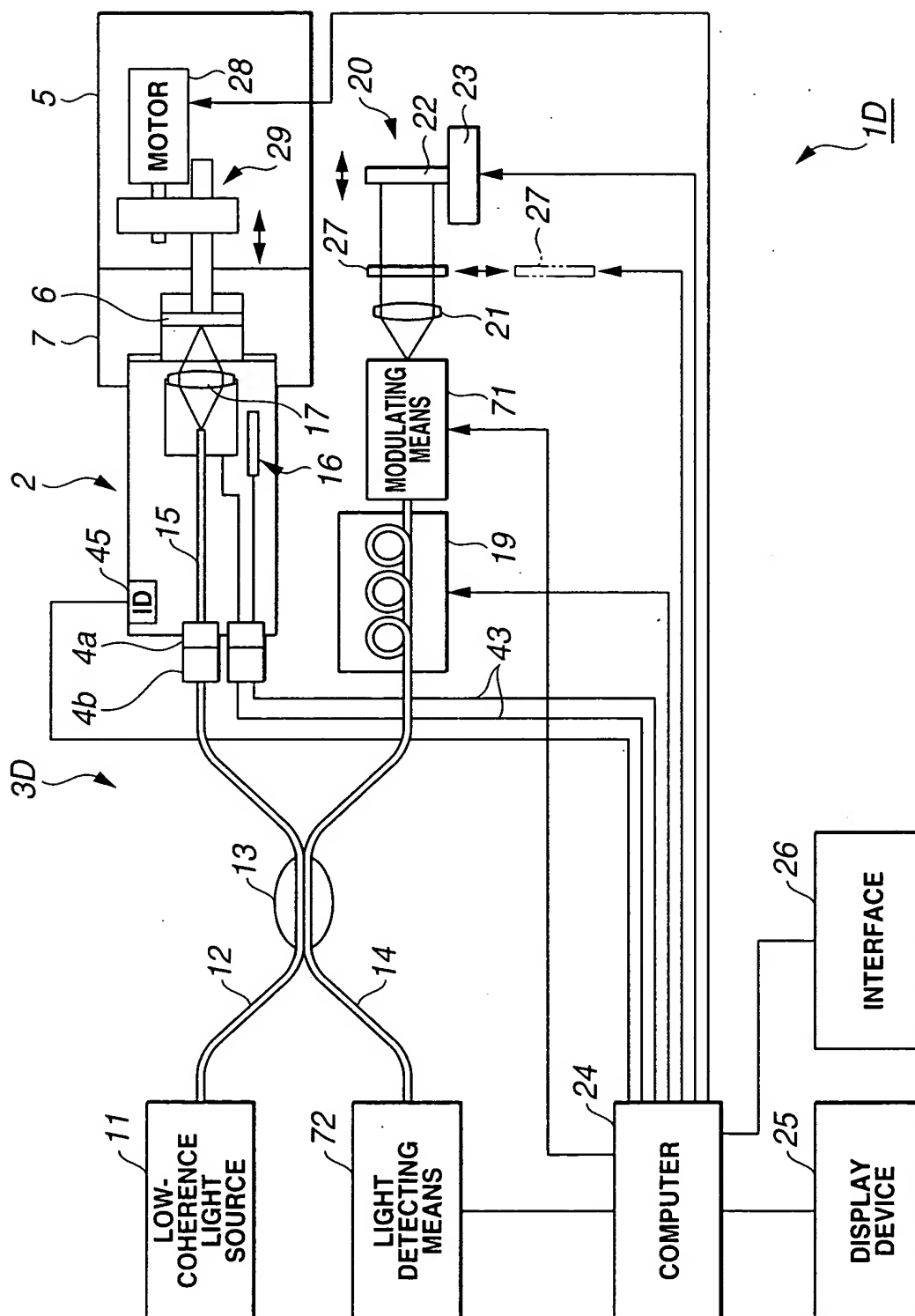


FIG.17

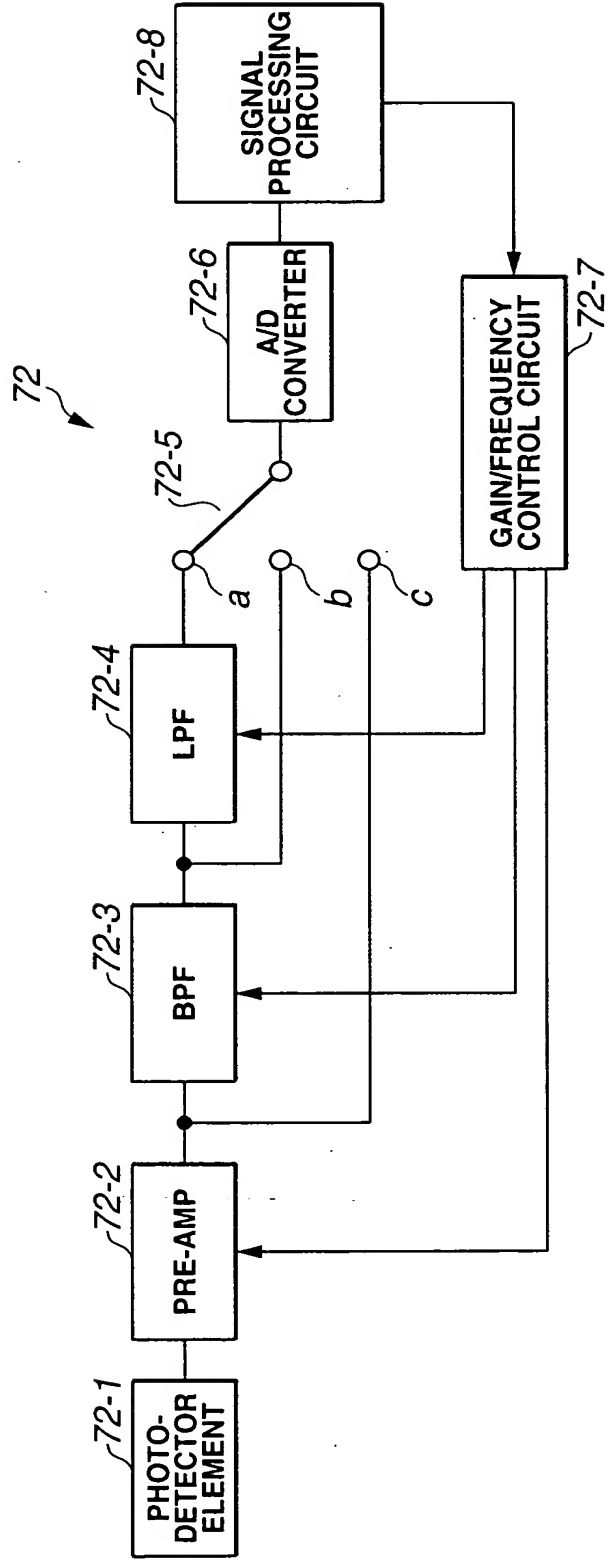


FIG. 18

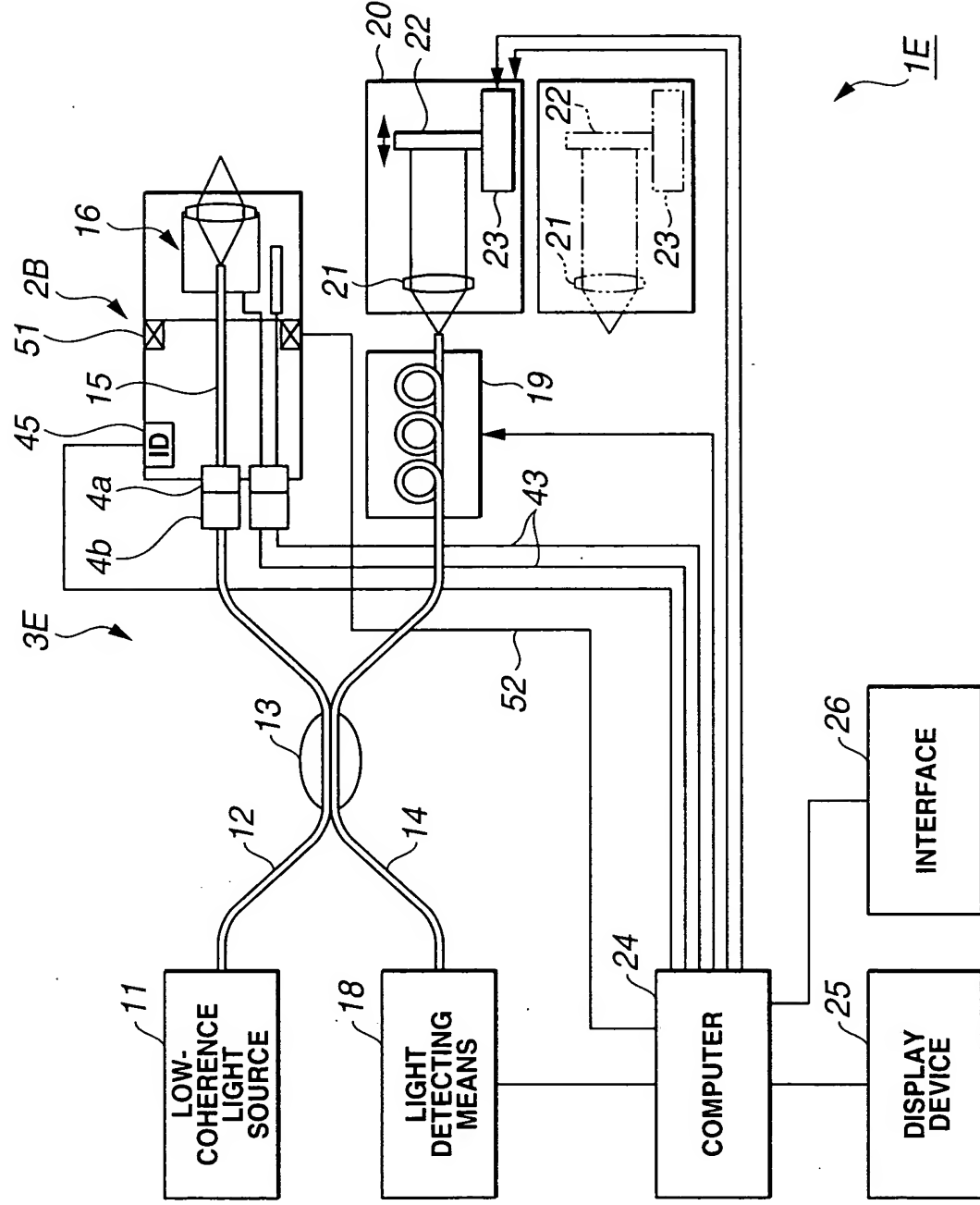


FIG.19

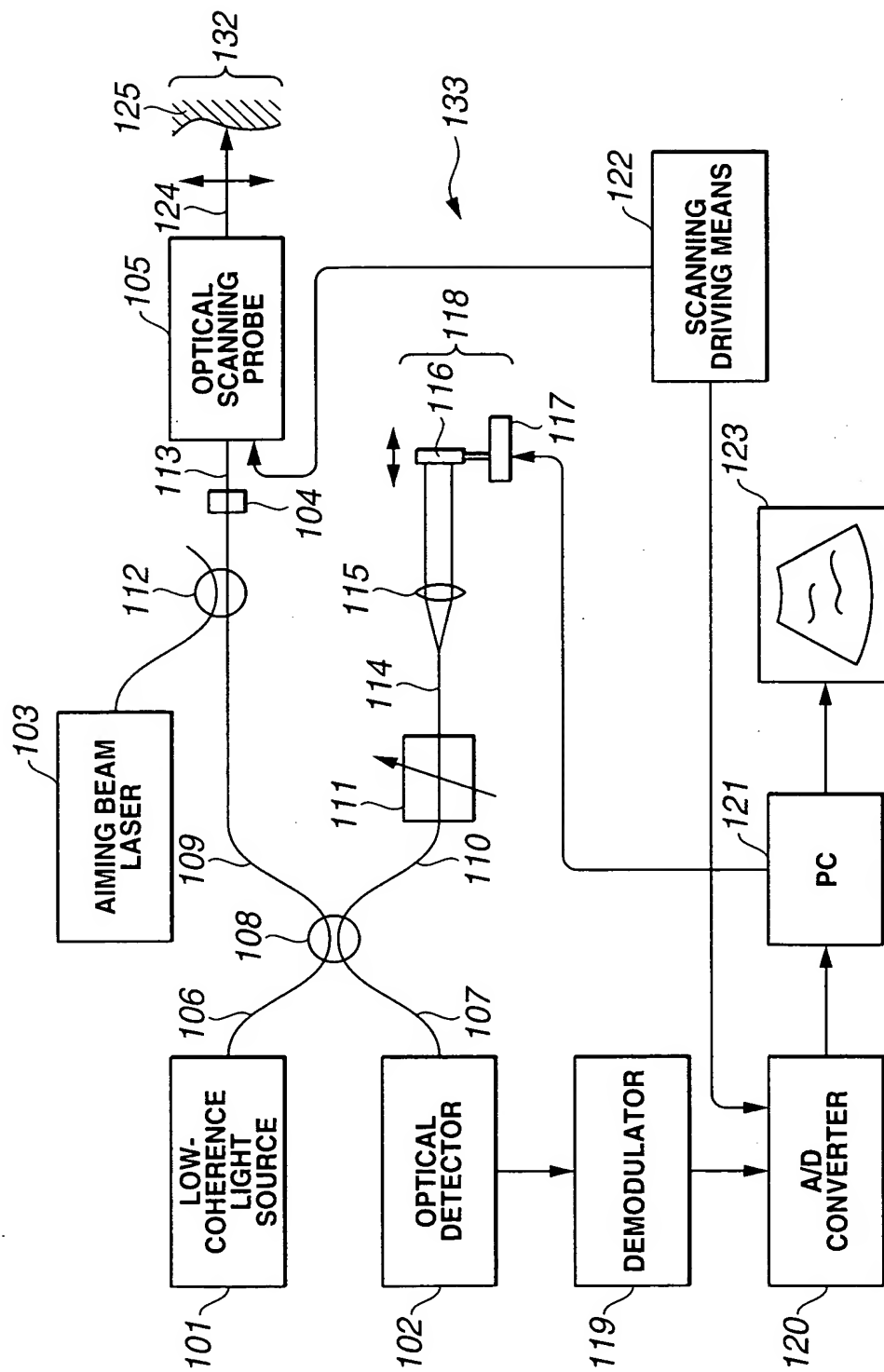


FIG.20

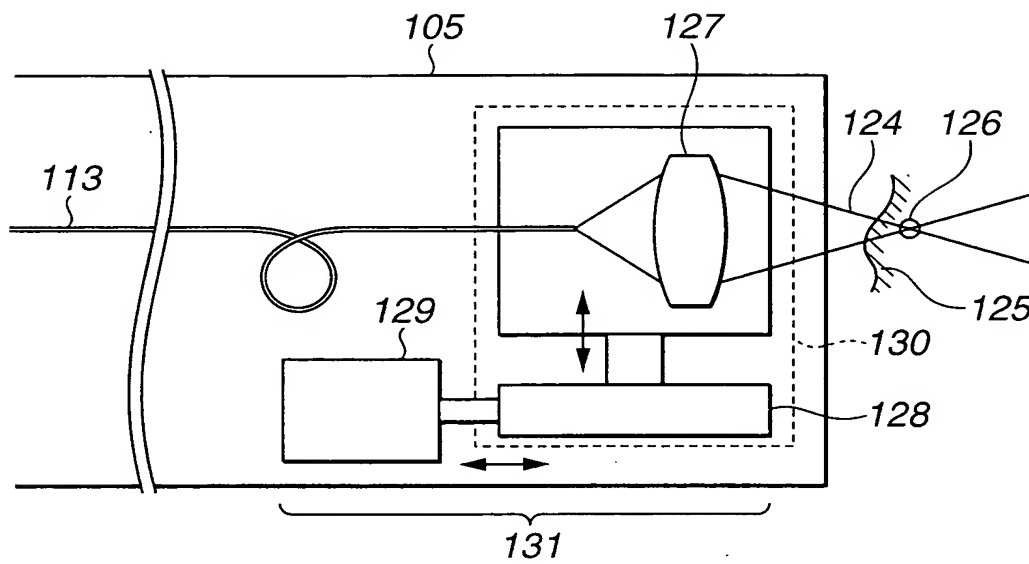


FIG.22

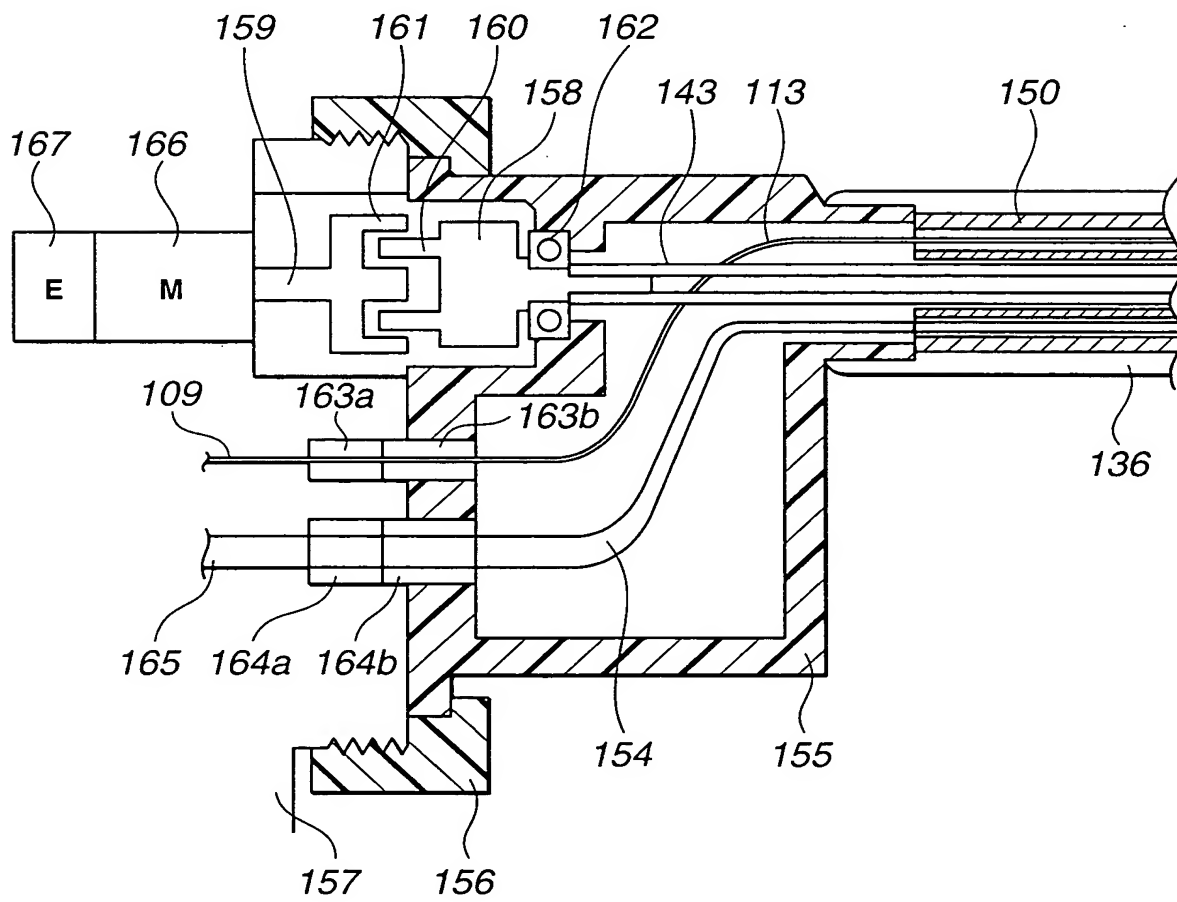


FIG.21

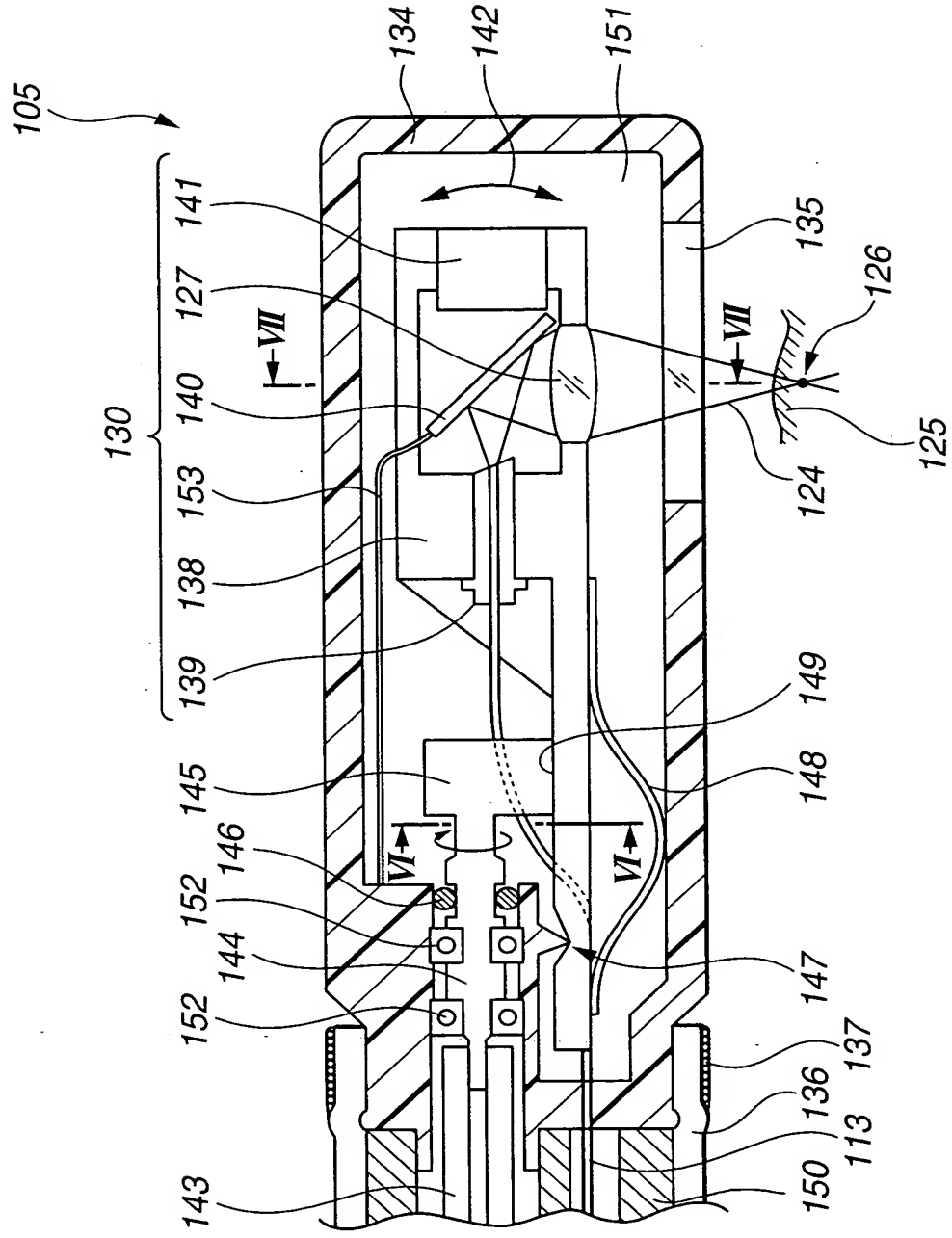


FIG.23

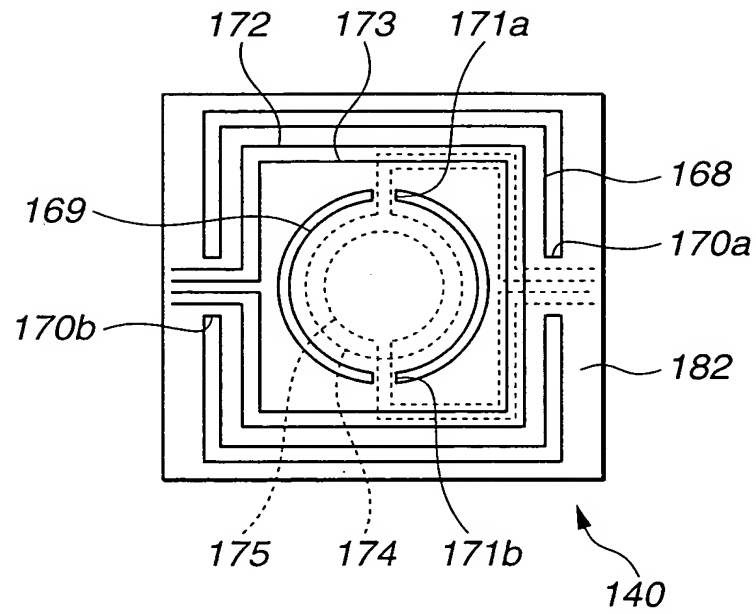


FIG.27

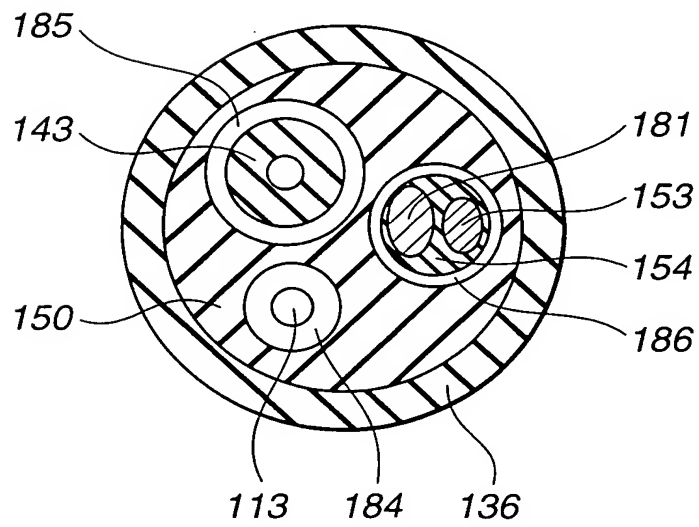


FIG.24

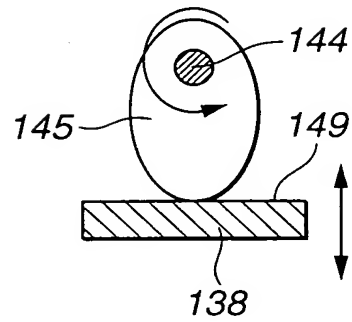


FIG.25

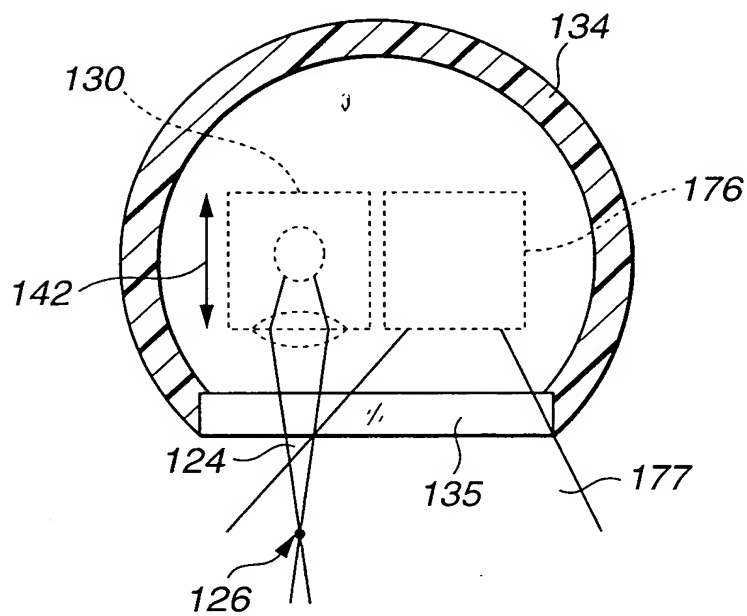


FIG.26

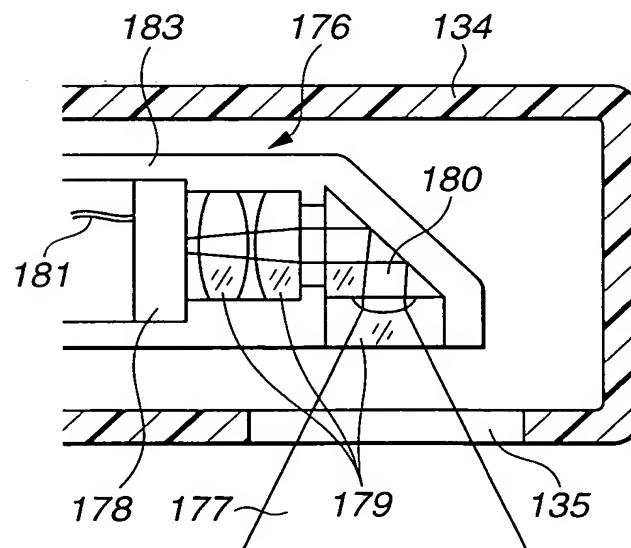


FIG.28

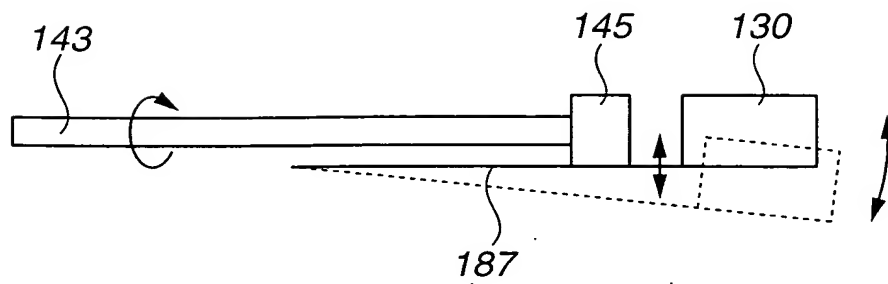


FIG.29

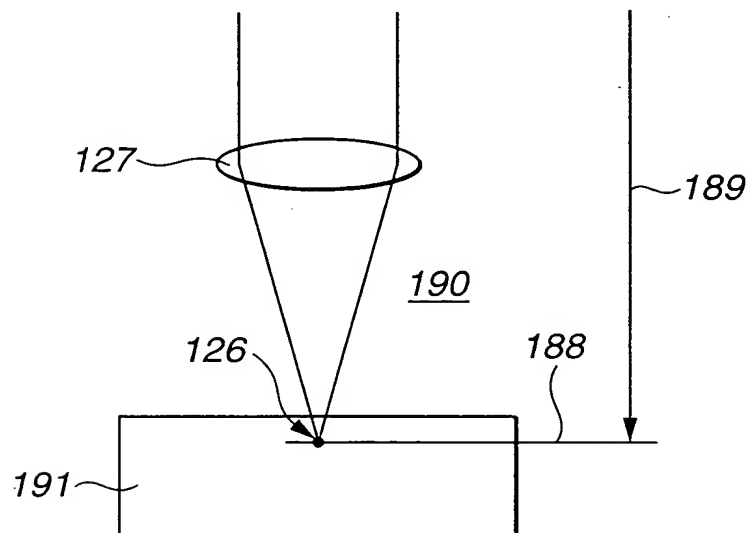


FIG.30

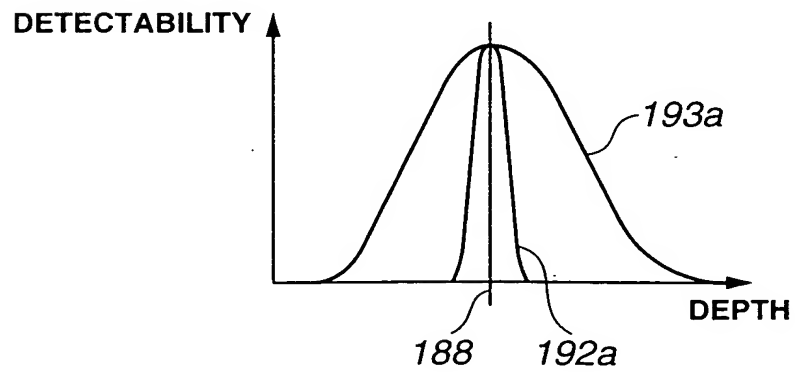


FIG.31

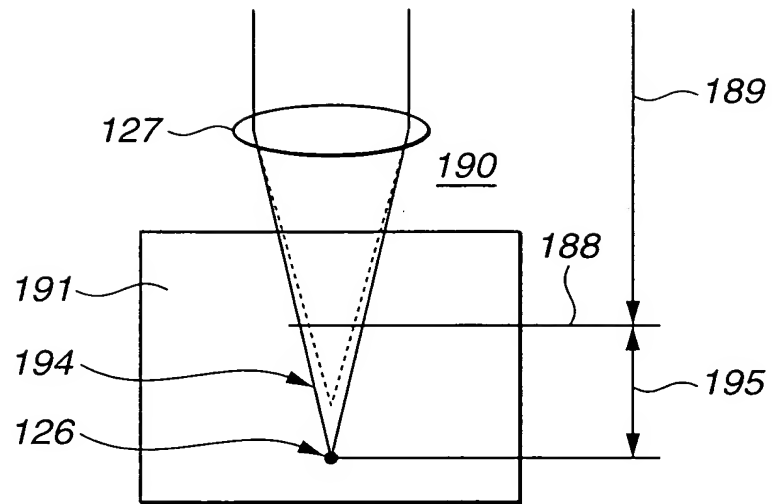


FIG.32

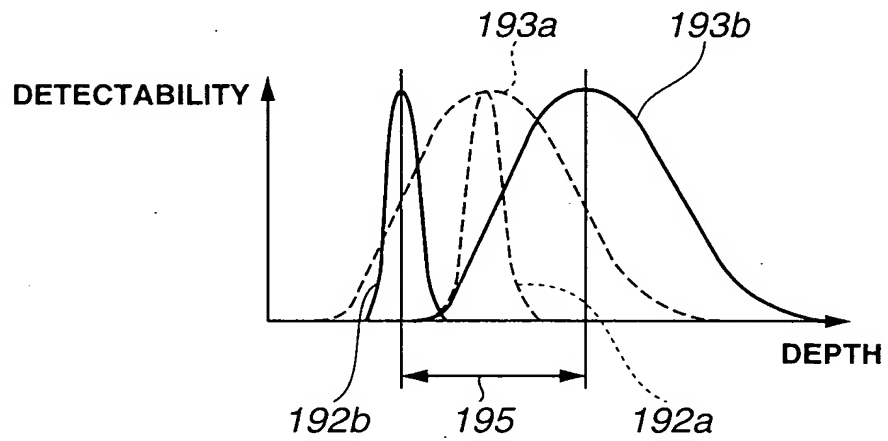


FIG.33

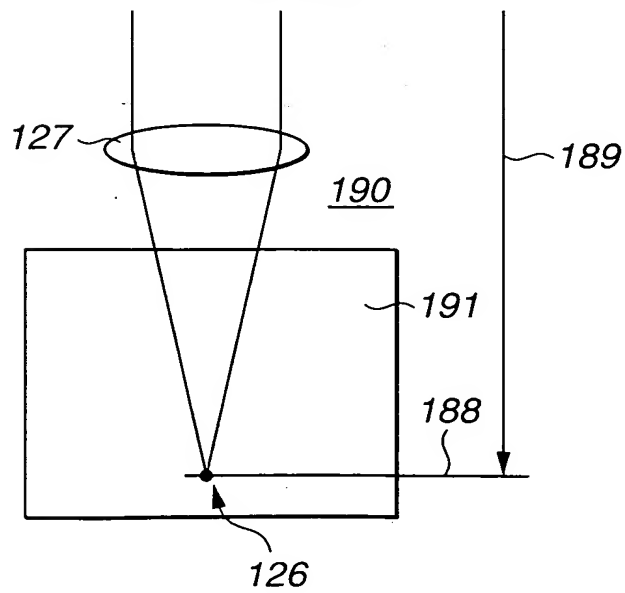


Figure 1 is a graph showing Detectability versus Depth. The vertical axis is labeled "DETECTABILITY" and the horizontal axis is labeled "DEPTH". There are two curves: a dashed curve labeled "193a" and a solid curve labeled "193b". Curve 193a has a sharp peak, while curve 193b has a broader peak. A horizontal line is drawn across the graph, intersecting both curves. A double-headed arrow labeled "192b" indicates the depth difference between the intersection points of the horizontal line with curves 193a and 193b.

This diagram shows a cross-sectional view of a multi-layered structure. A lens 127 is positioned within a central cavity. The cavity is bounded by vertical walls 198 and 197, and a bottom layer 190. The walls 198 and 197 are shown with hatching. A light source 126 is located below the lens 127, with light rays passing through the lens. The distance from the light source 126 to the lens 127 is labeled L4'. The distance from the lens 127 to the bottom layer 190 is labeled L3'. The distance from the bottom layer 190 to the top surface of the structure is labeled L2'. The distance from the top surface of the structure to the top of the walls 198 and 197 is labeled L1'. The top surface of the structure is labeled 189. The bottom layer 190 is labeled 191. The top surface of the walls 198 and 197 is labeled 196.

FIG.37

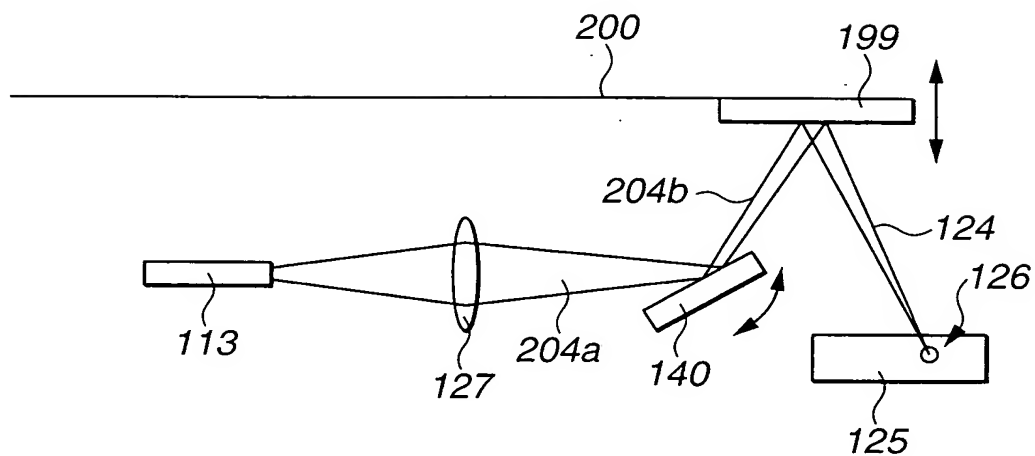


FIG.38

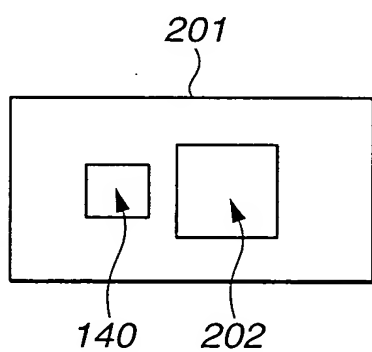


FIG.39

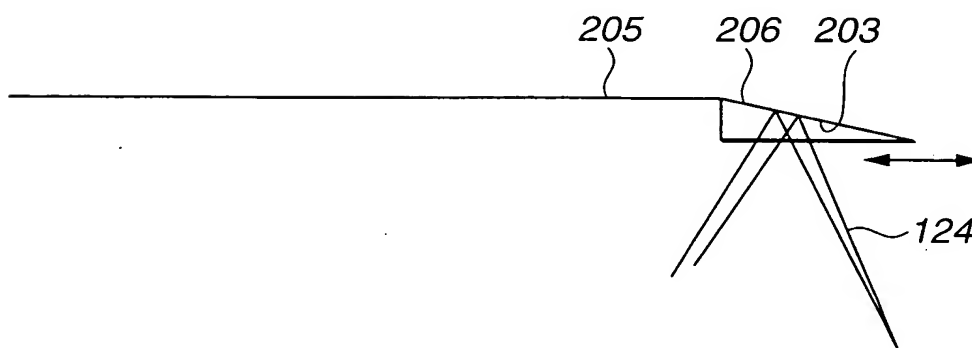


FIG.40

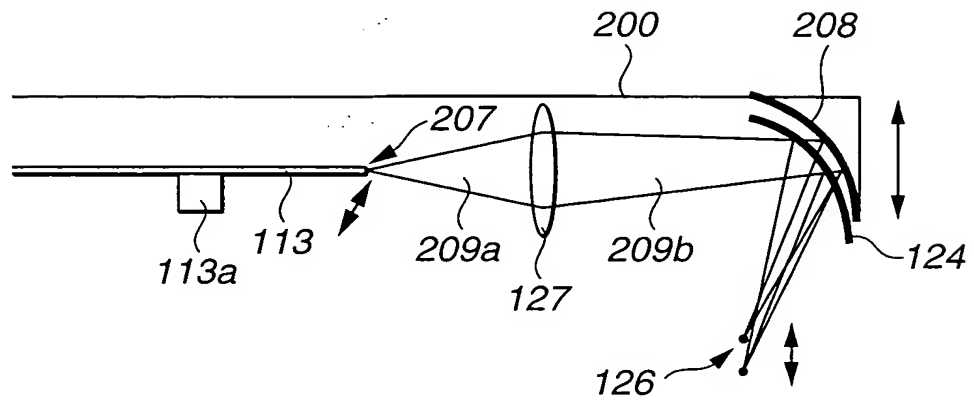


FIG.41

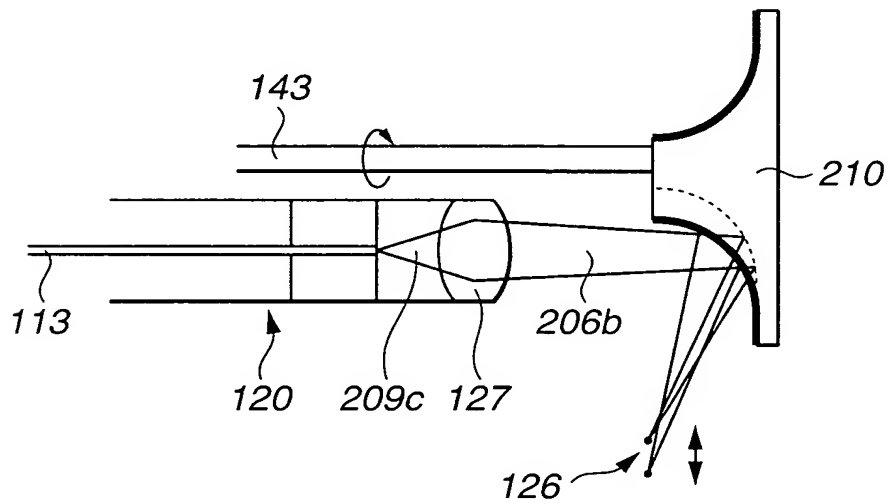


FIG.42

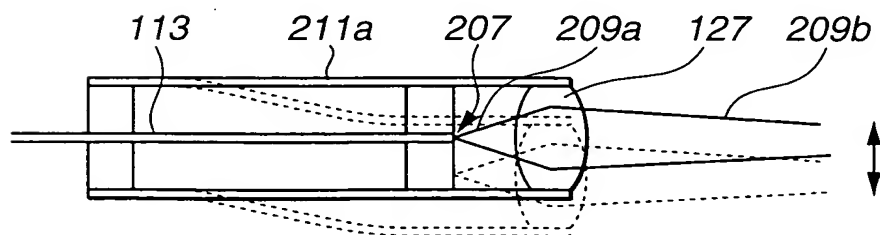


FIG.43

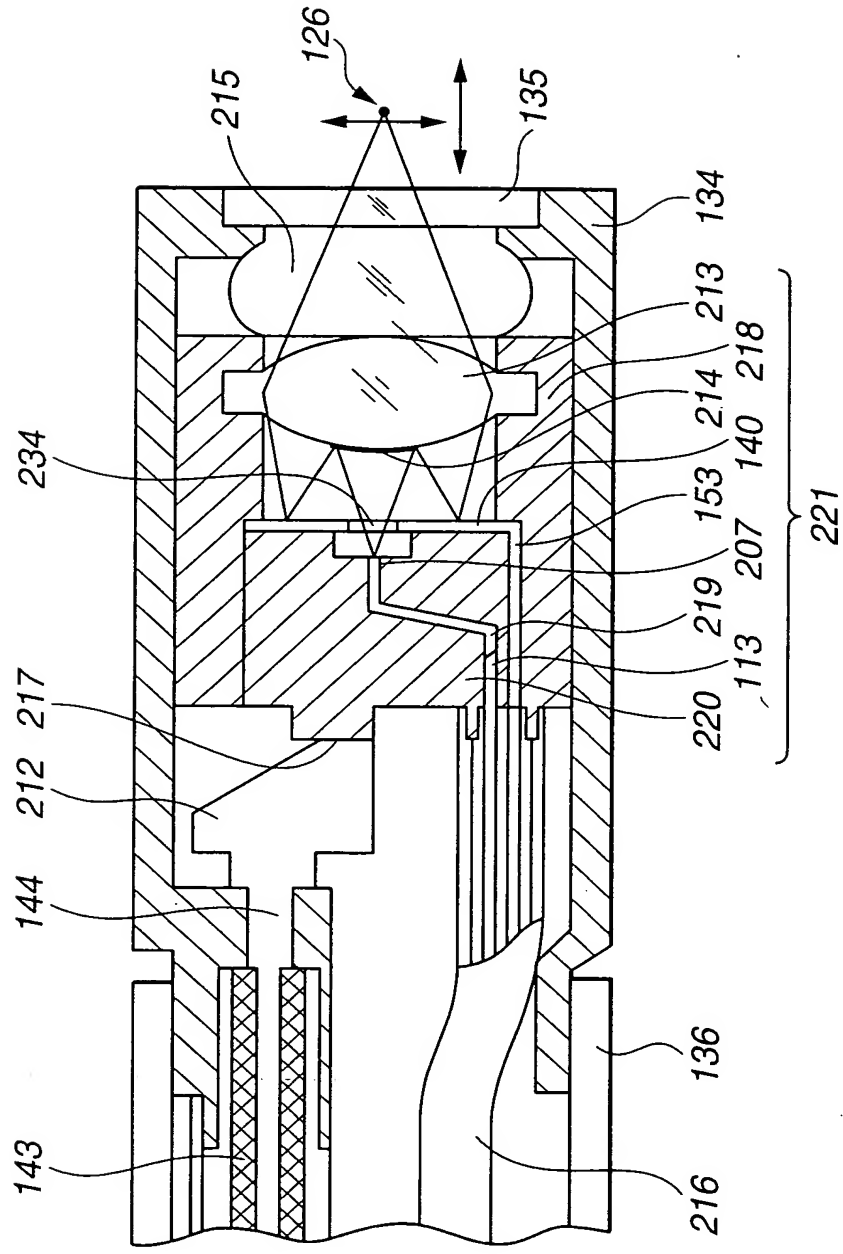


FIG.44

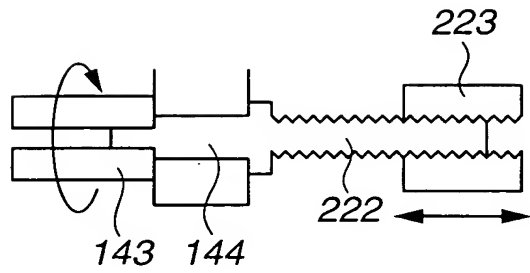


FIG.45

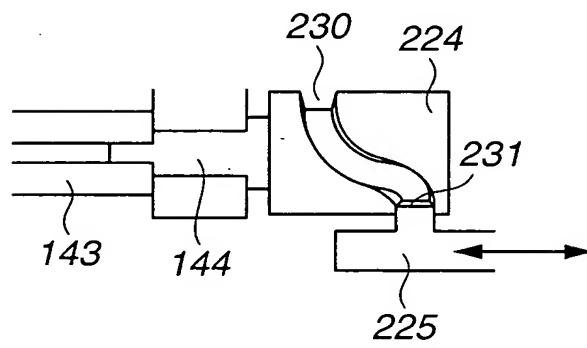


FIG.46

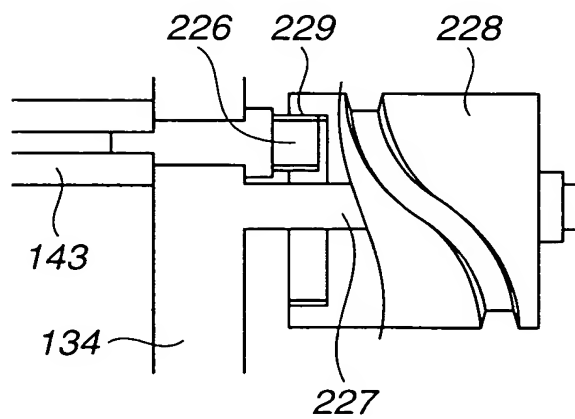


FIG.47

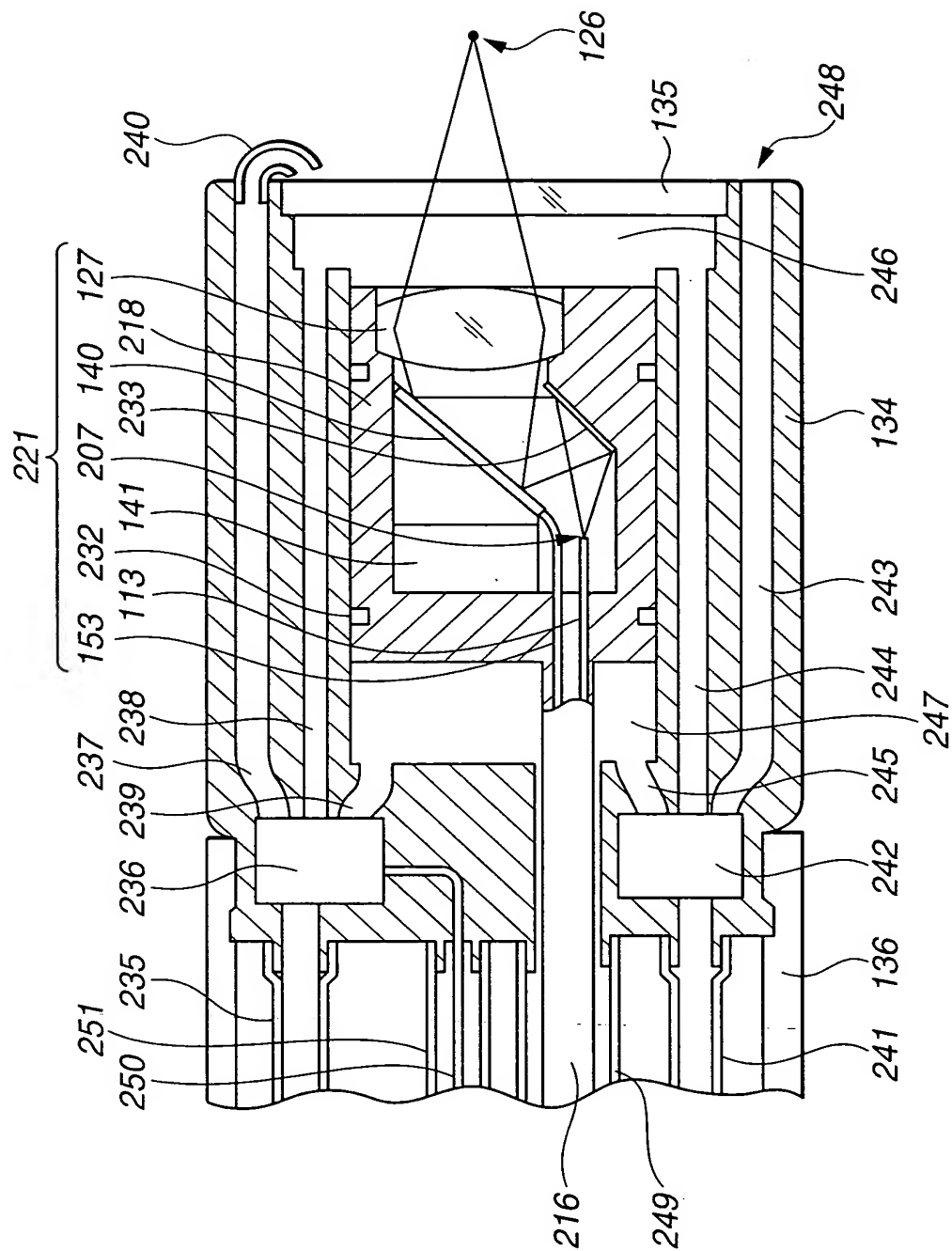


FIG.48

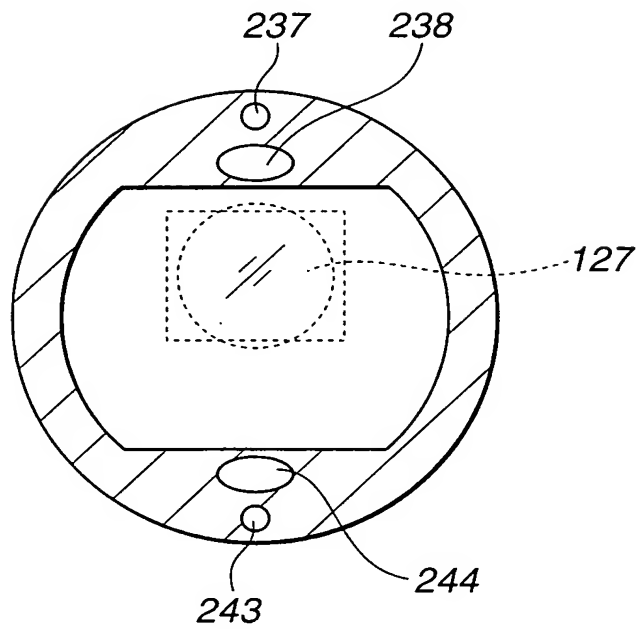


FIG.49

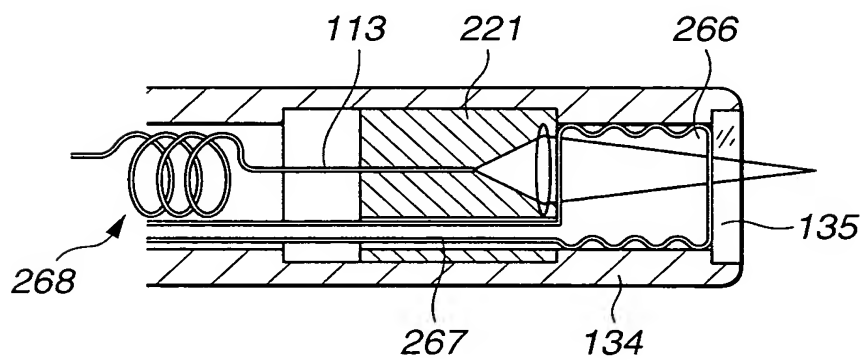


FIG.50

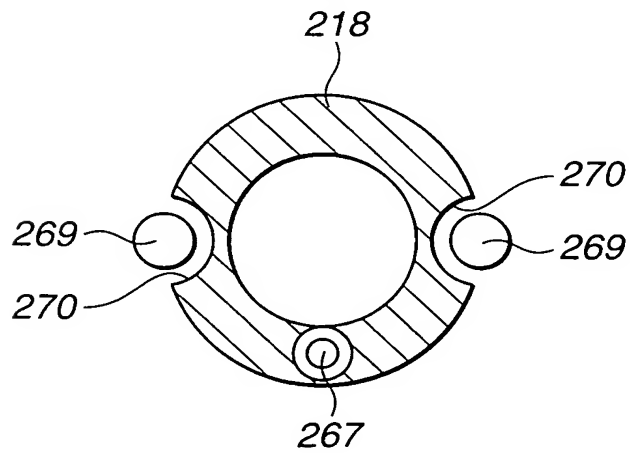


FIG.51

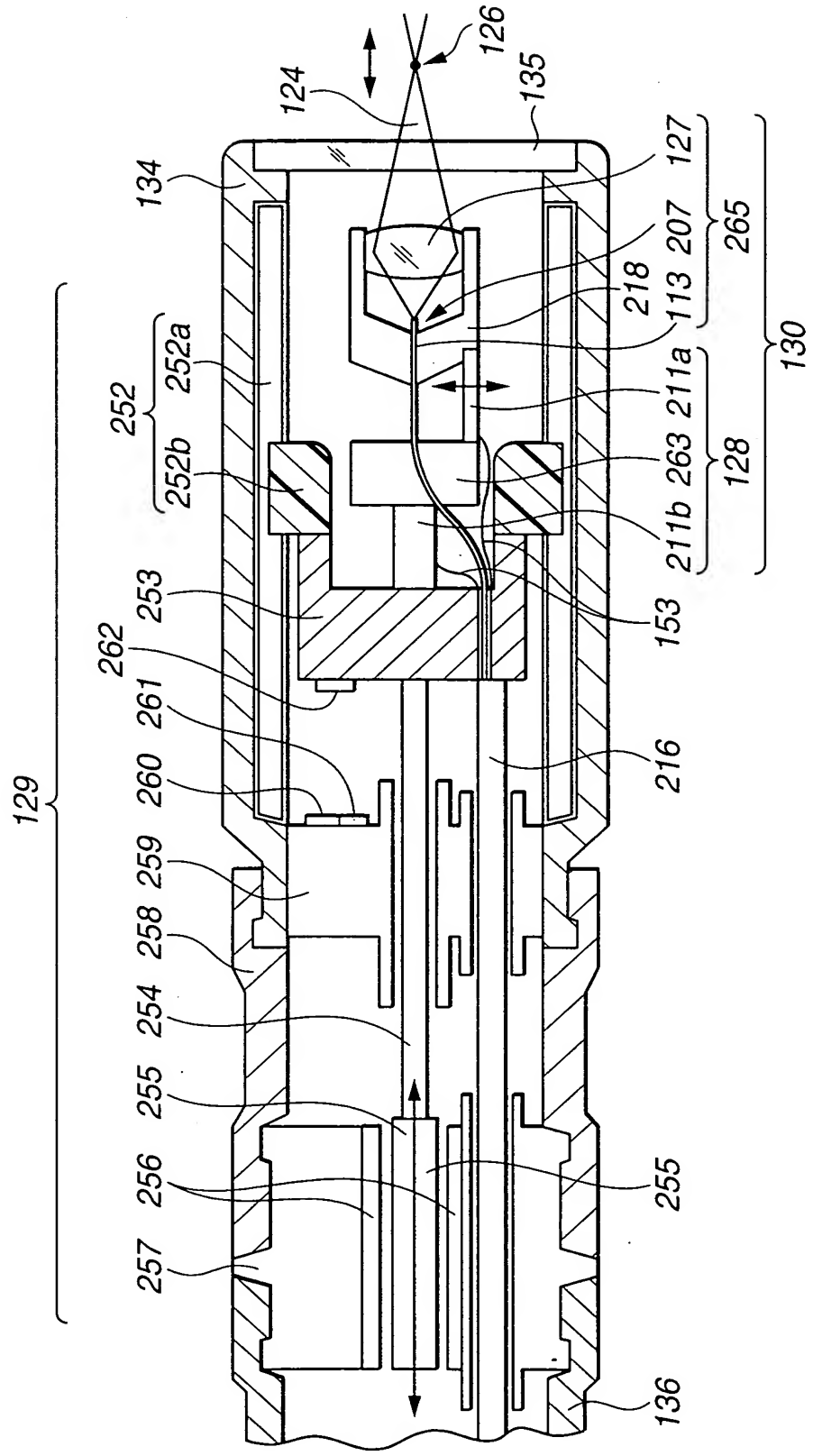


FIG.52

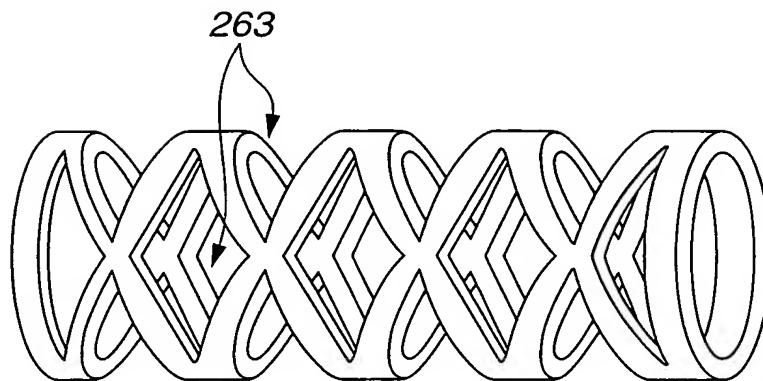


FIG.53

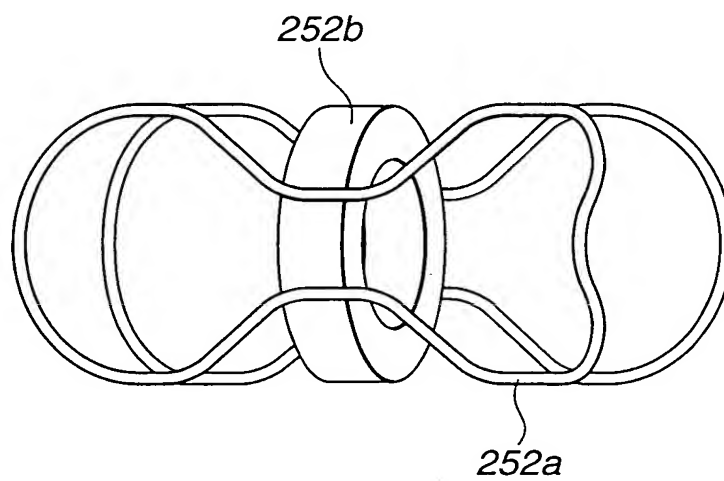


FIG.54

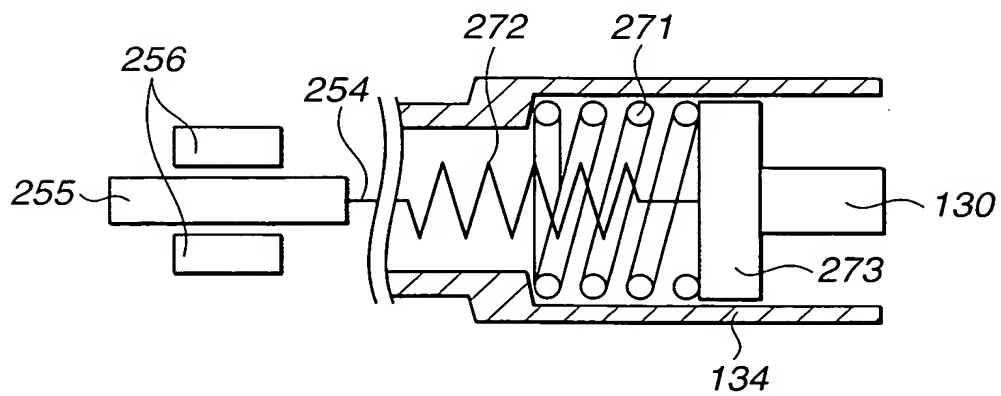


FIG.55

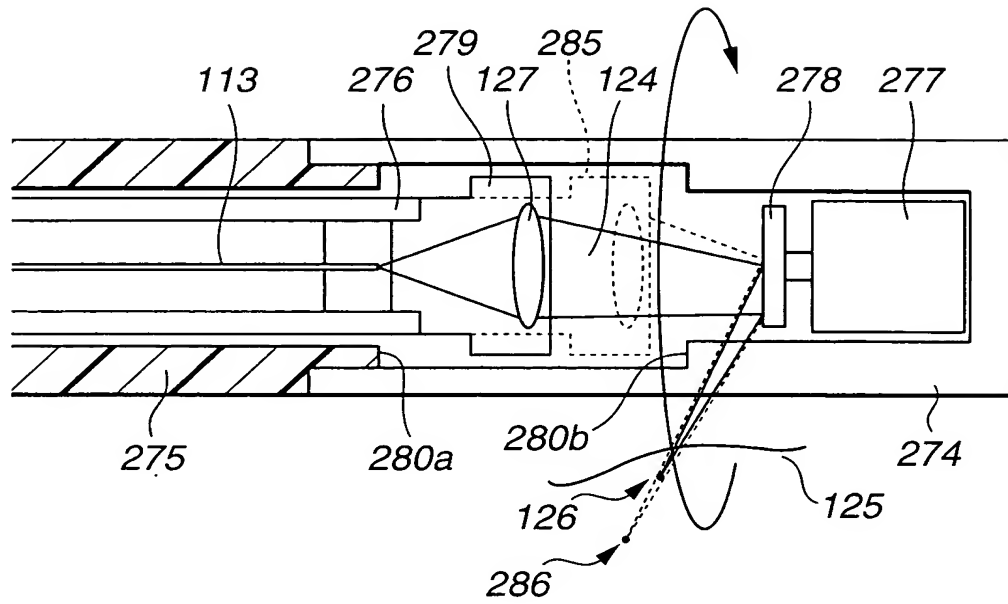


FIG.56

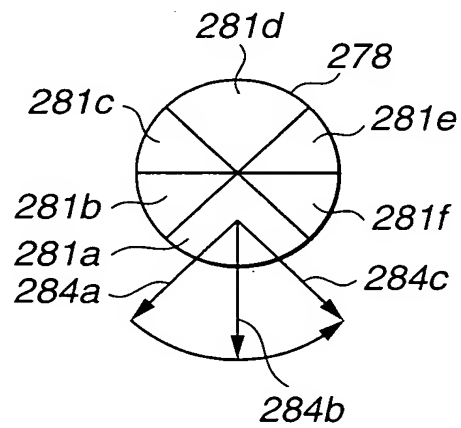


FIG.57

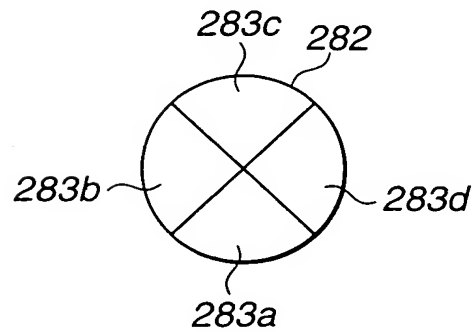


FIG. 58

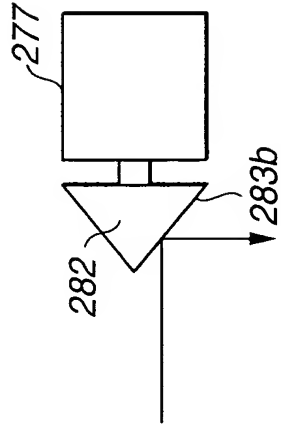


FIG. 59

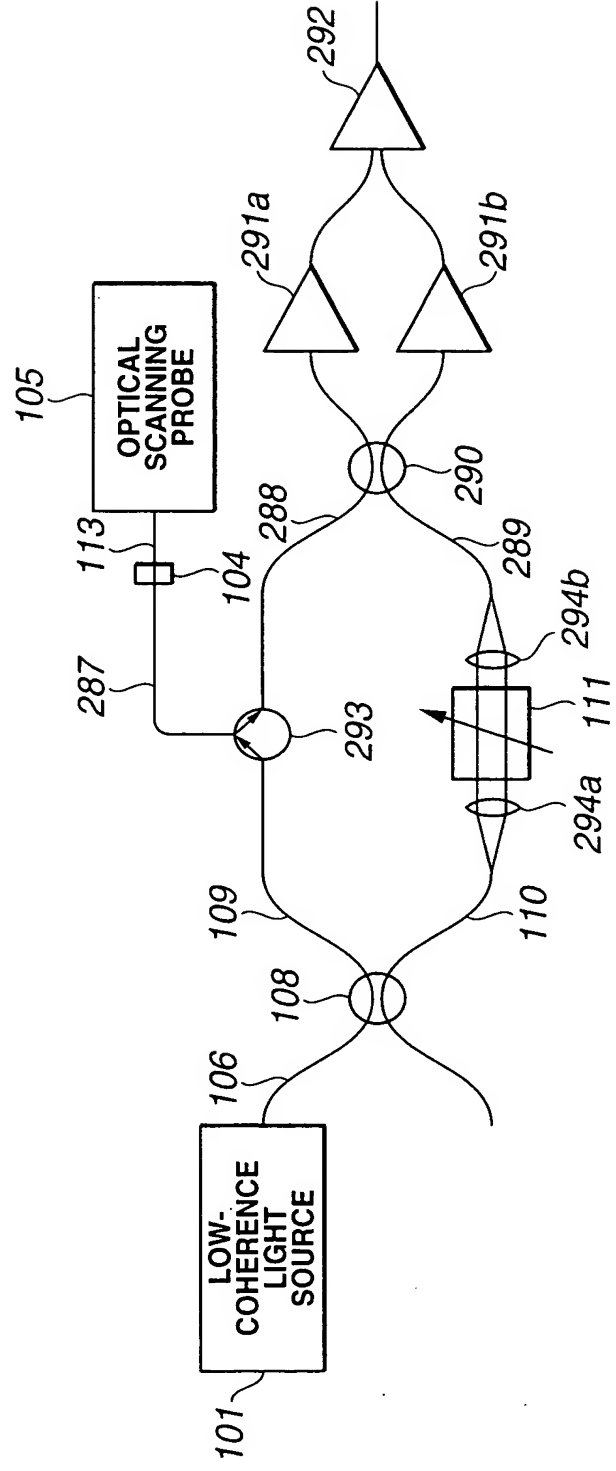


FIG. 60

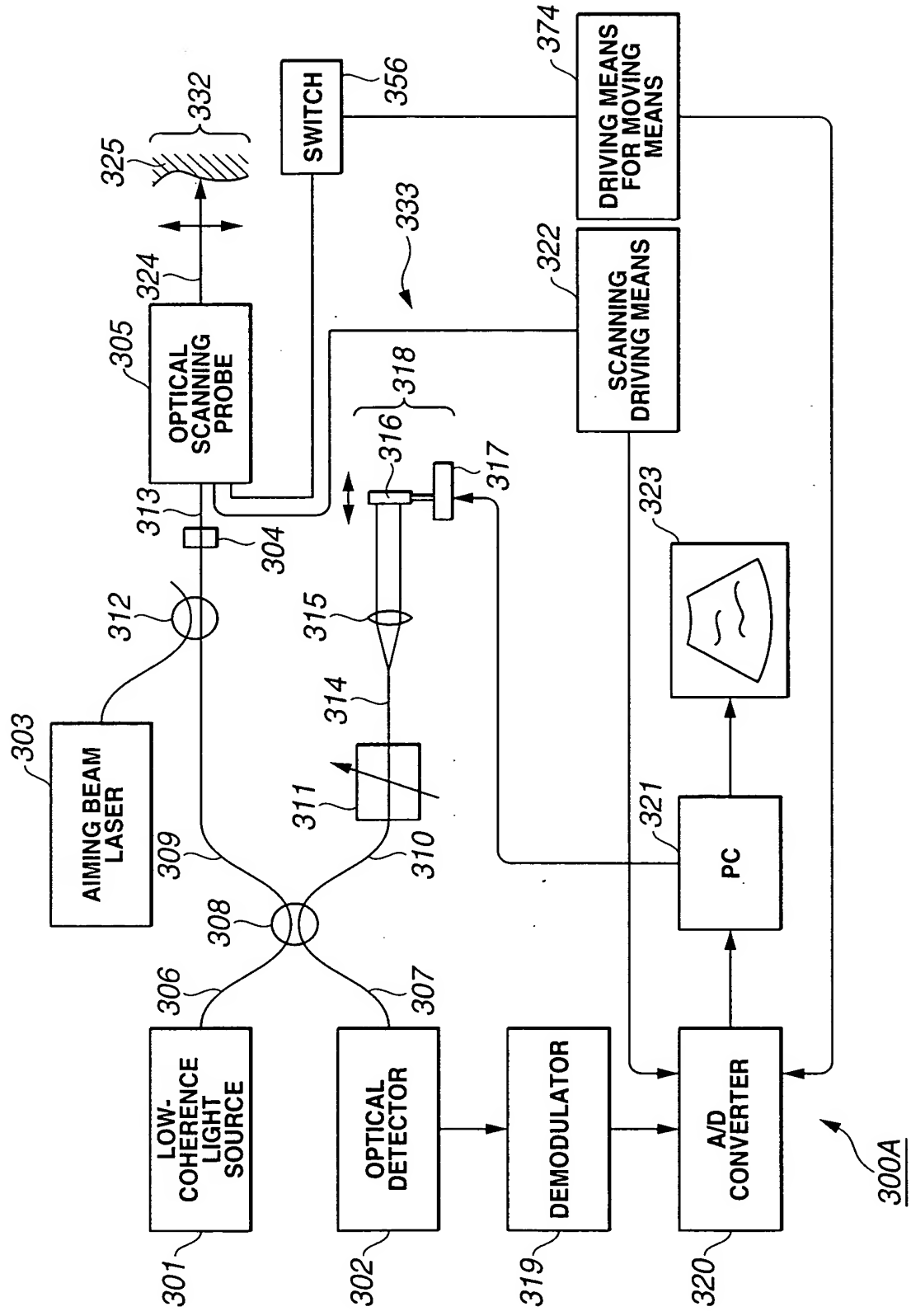


FIG.61

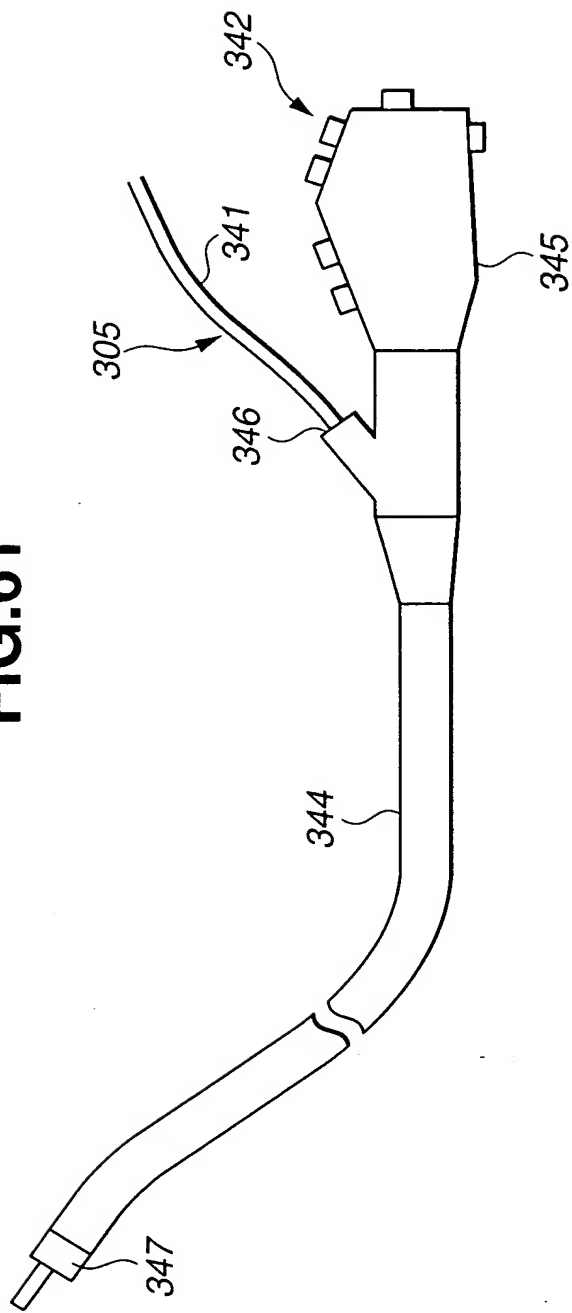


FIG.64

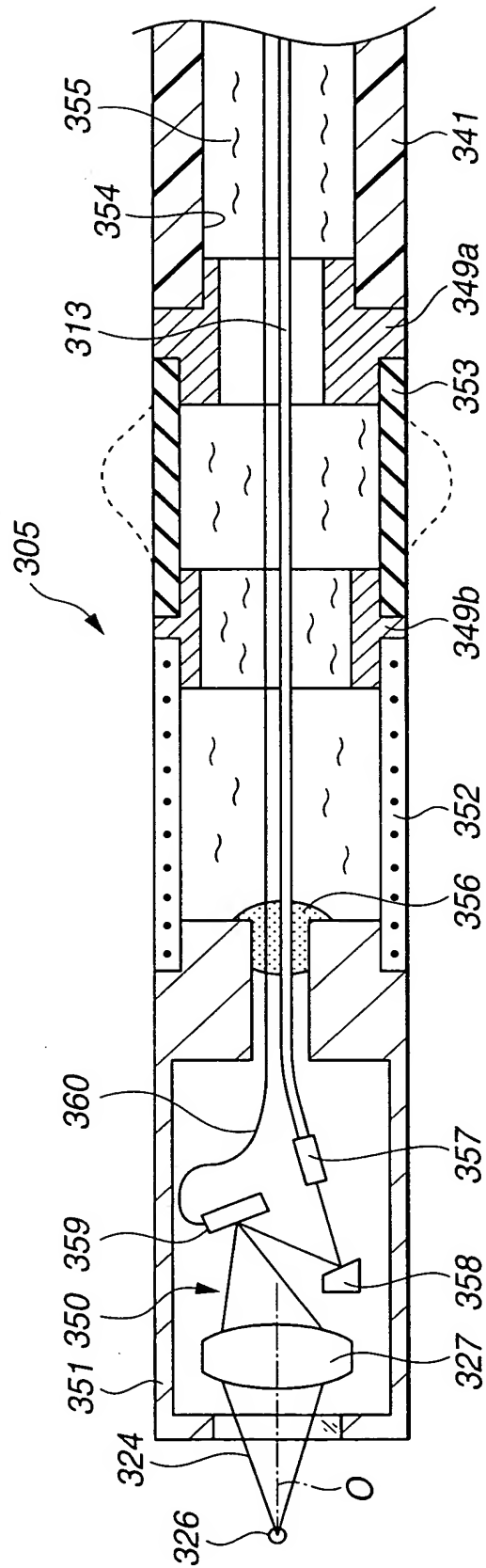


FIG.63

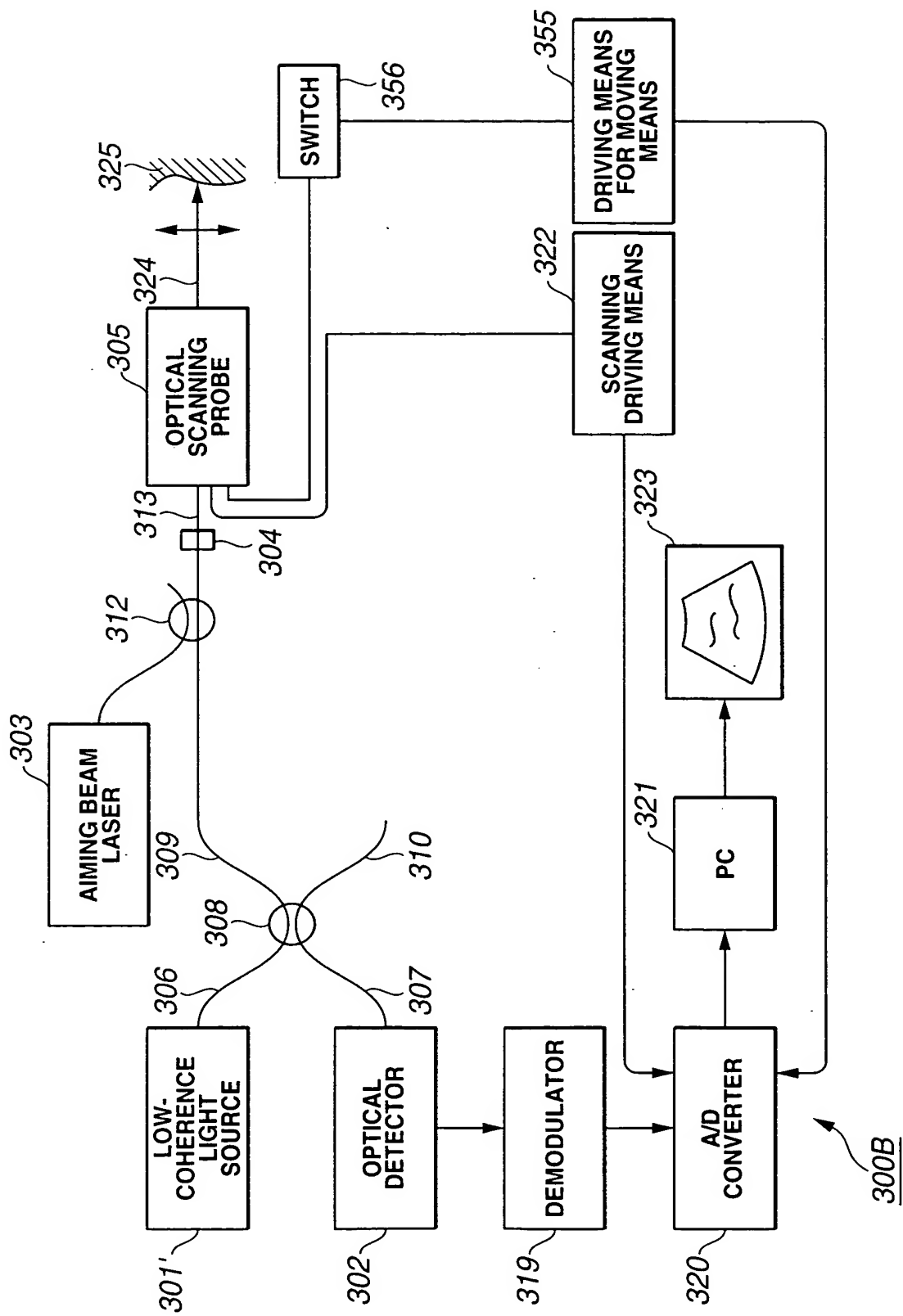


FIG.65

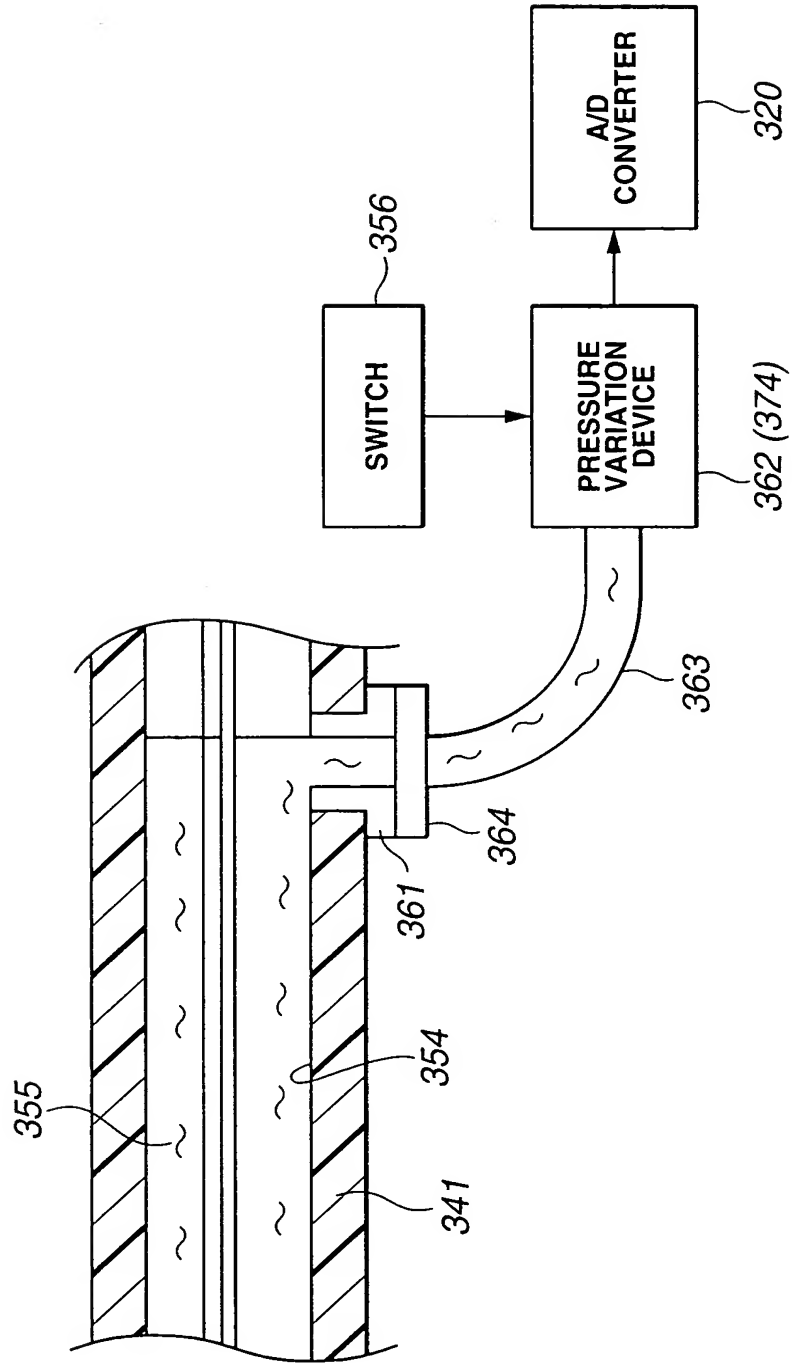


FIG.66

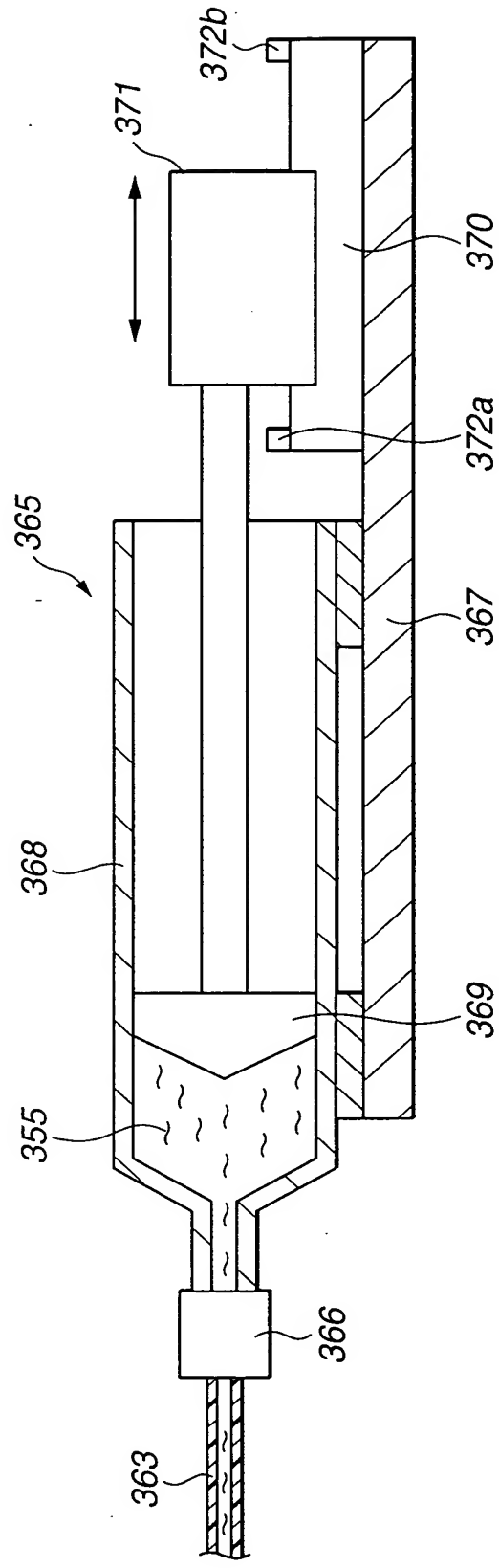


FIG.70

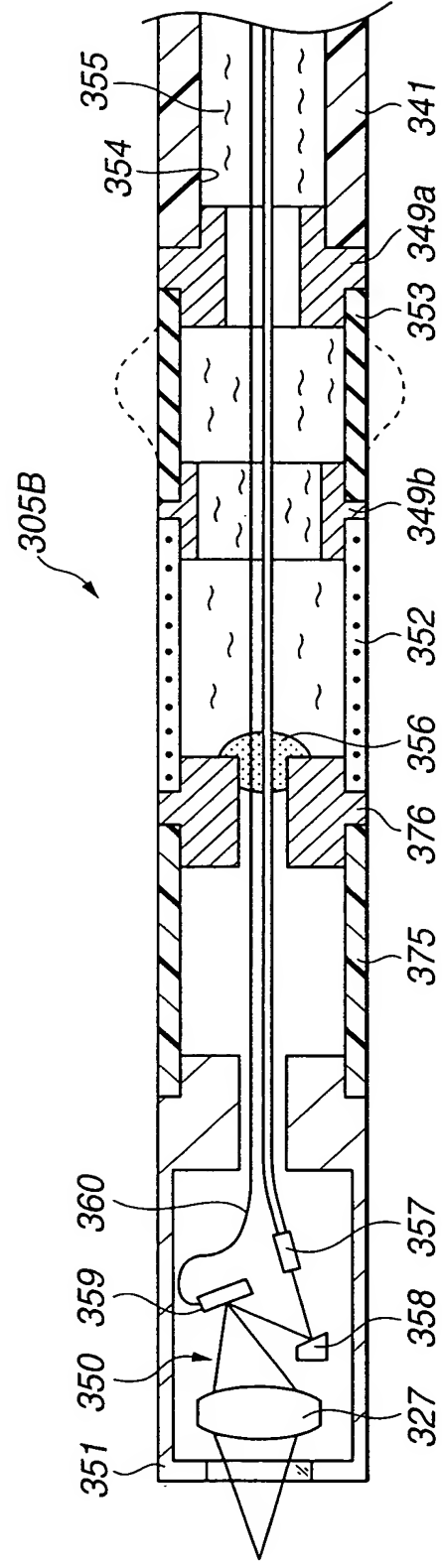


FIG.67B

FIG.67A

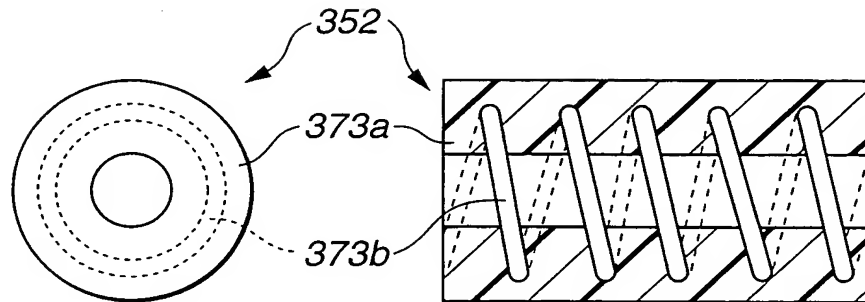


FIG.68B

FIG.68A

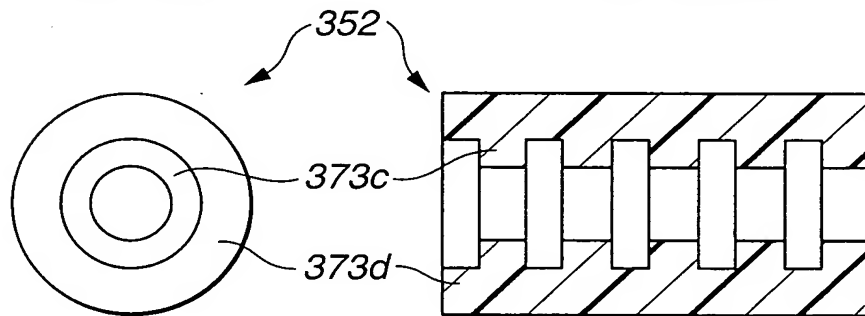


FIG.69B

FIG.69A

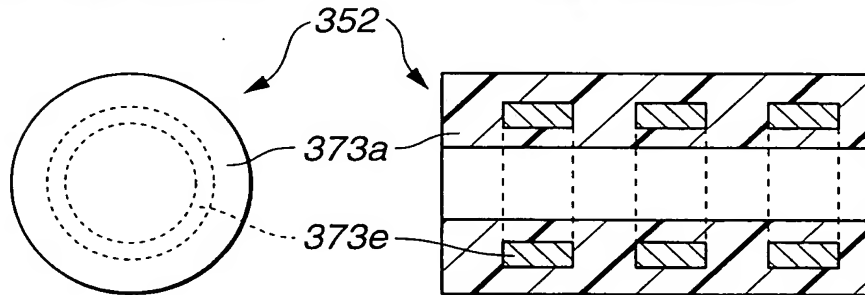


FIG. 71A

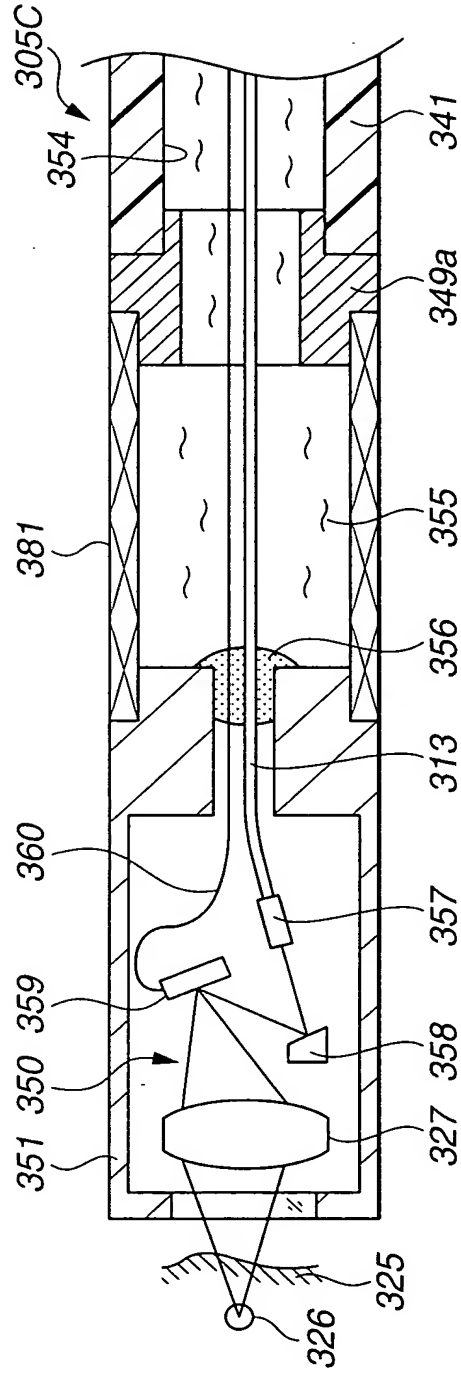


FIG. 71B

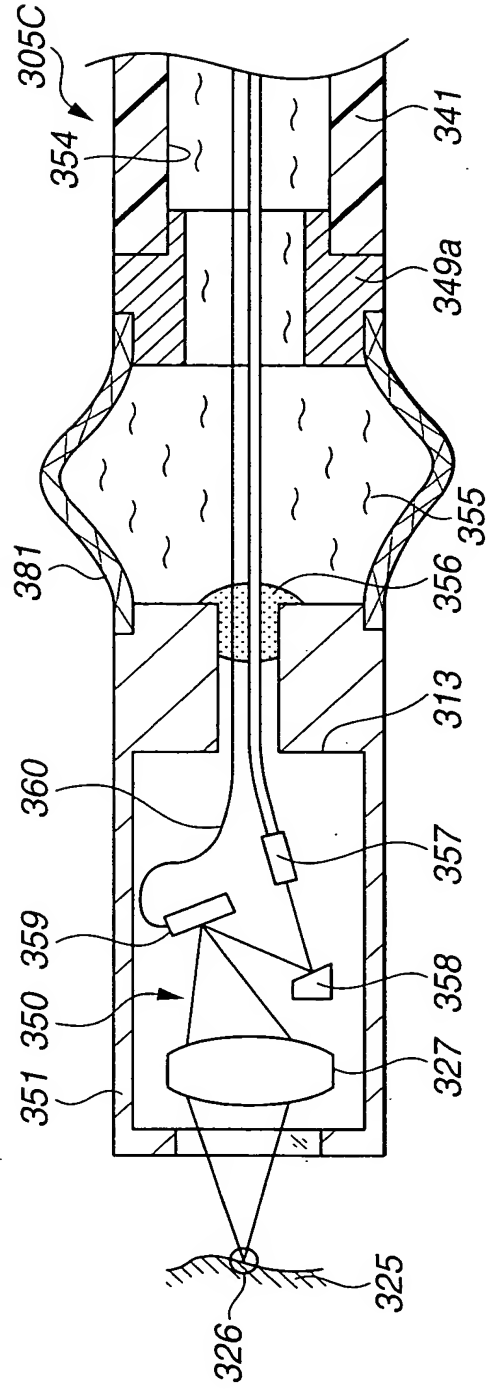


FIG. 72B

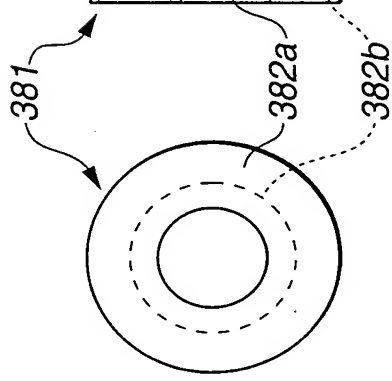


FIG. 72A

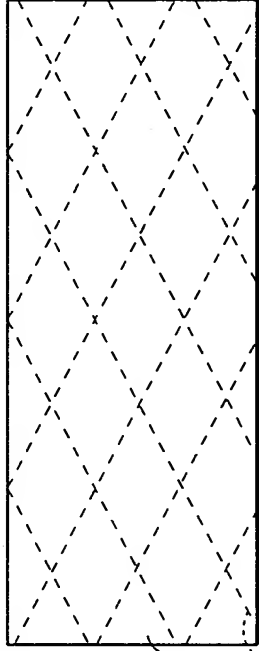


FIG. 73B

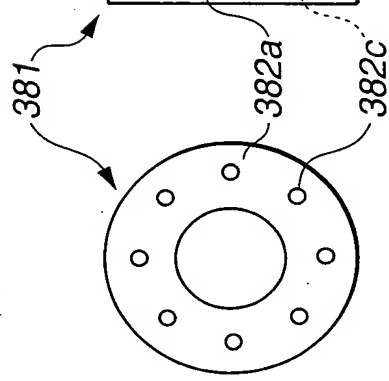


FIG. 73A

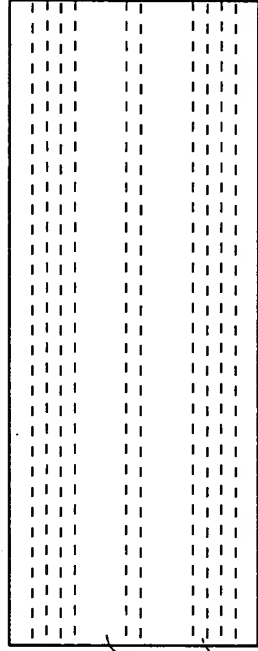


FIG. 74B

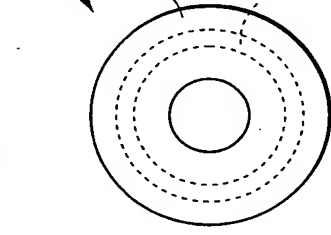


FIG. 74A

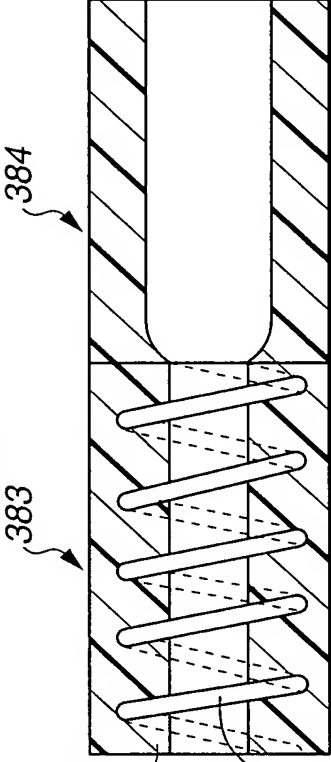


FIG. 75B

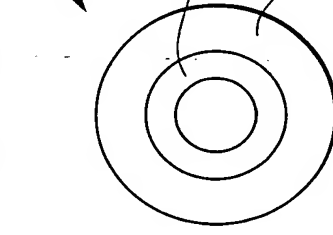


FIG. 75A

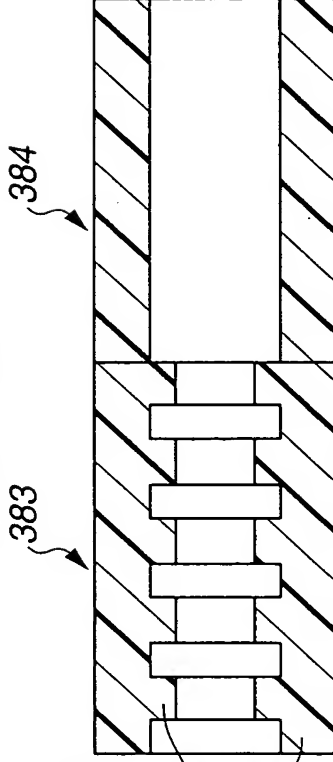


FIG. 76B

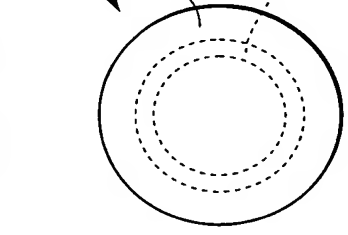


FIG. 76A

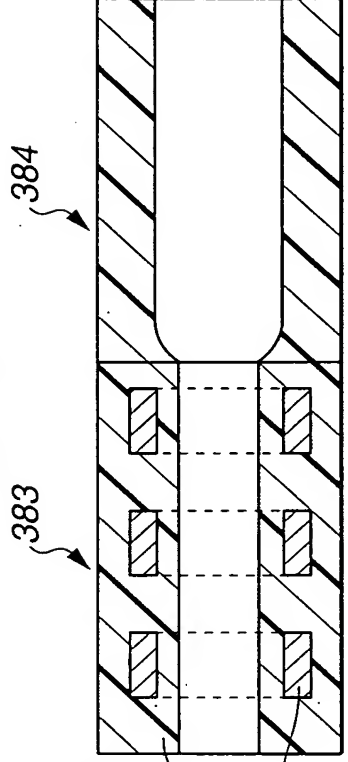


FIG. 79A

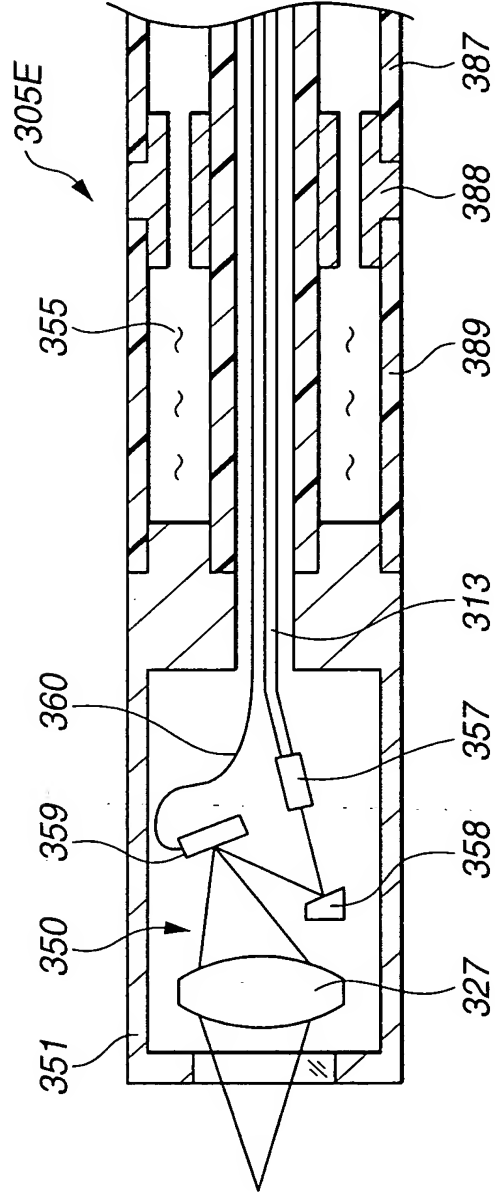


FIG. 79B

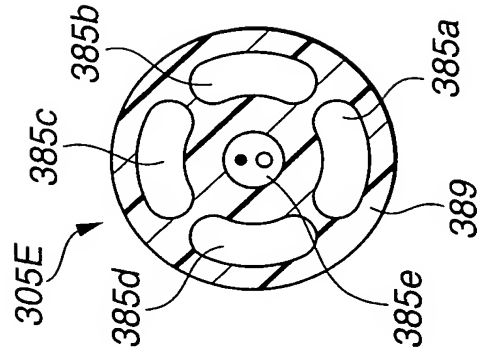


FIG. 80

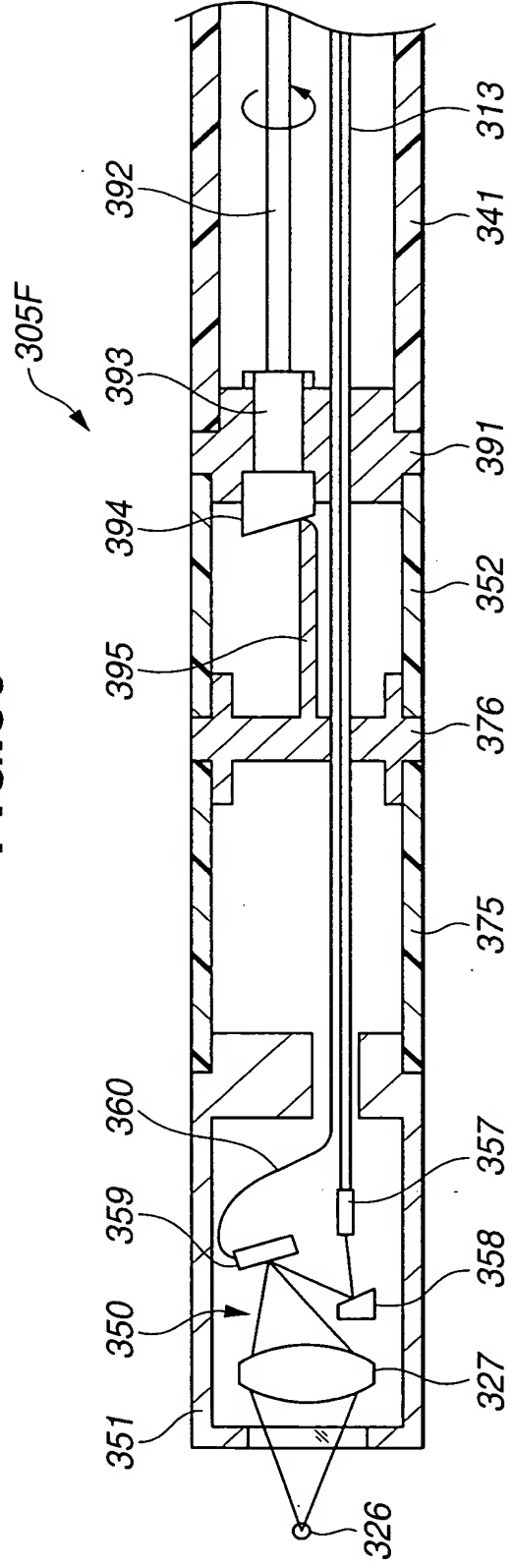


FIG. 83

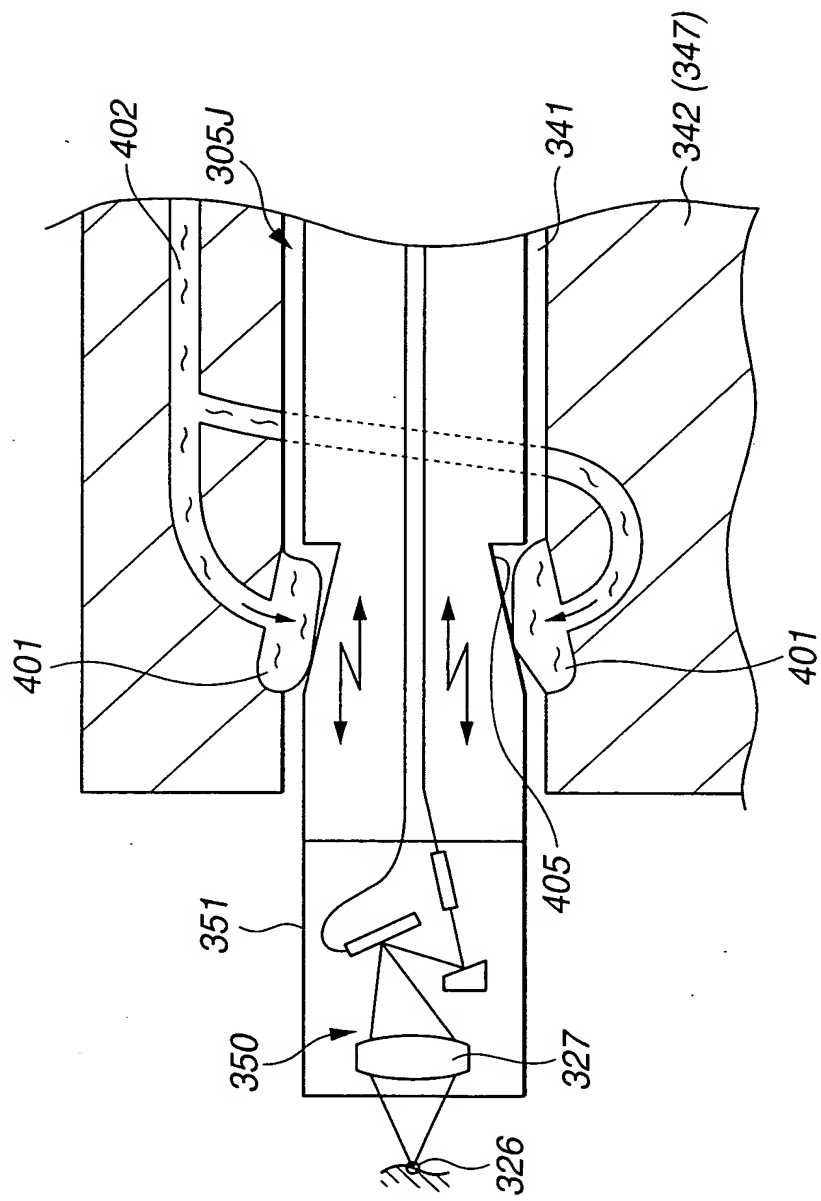


FIG. 85A

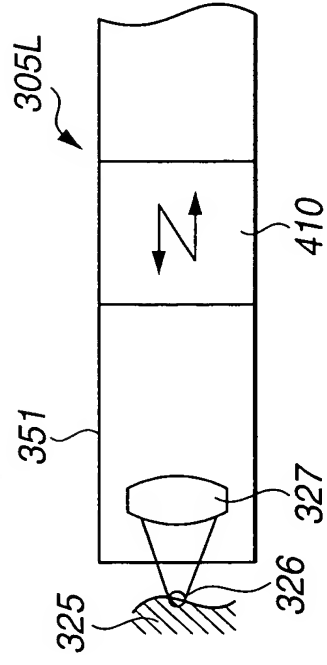


FIG. 85C

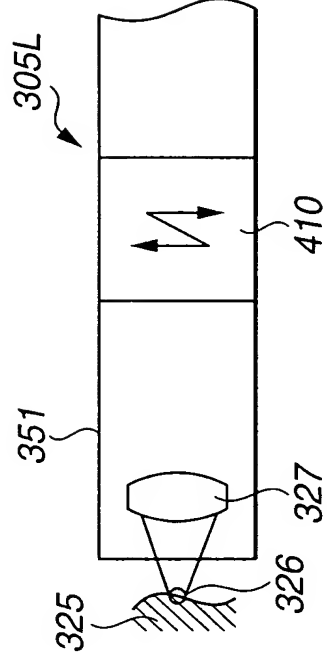


FIG. 85B

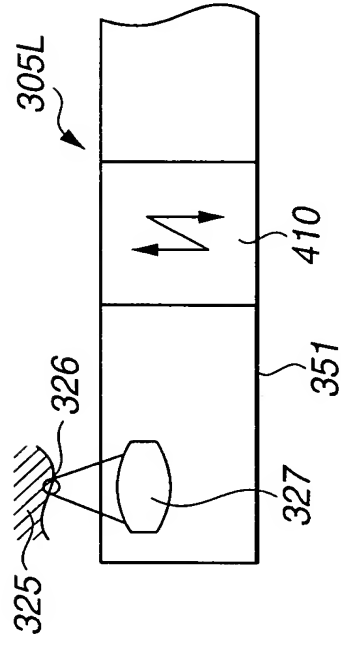


FIG. 85D

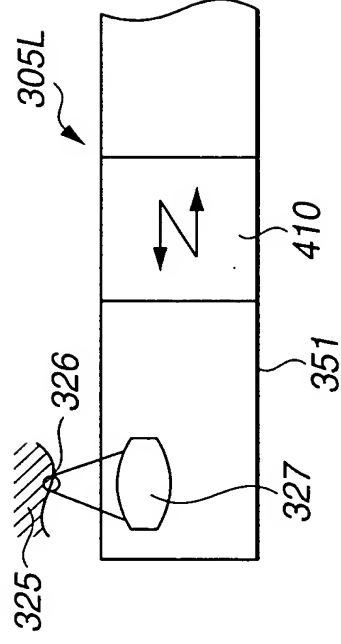


FIG. 86

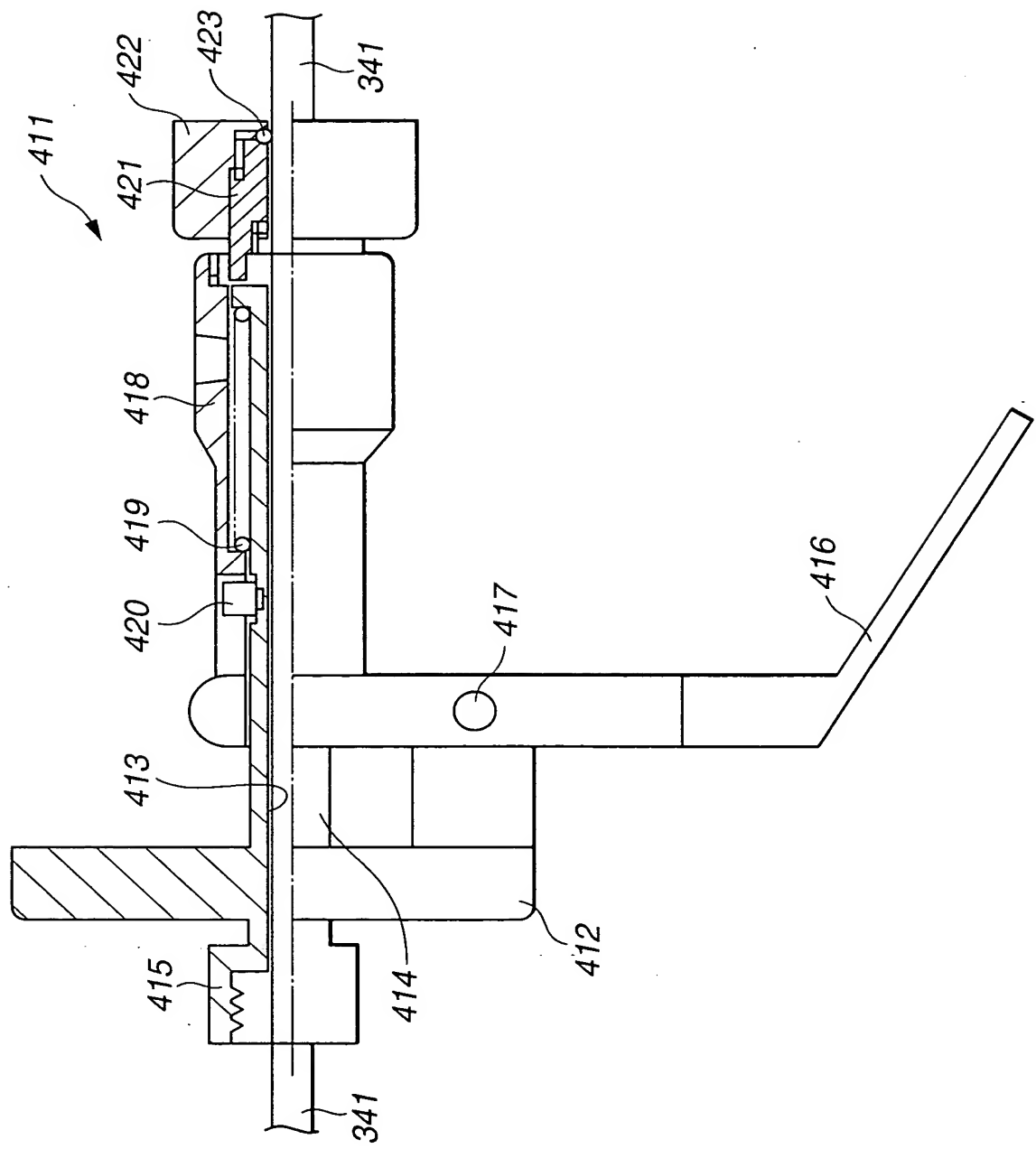


FIG. 87A

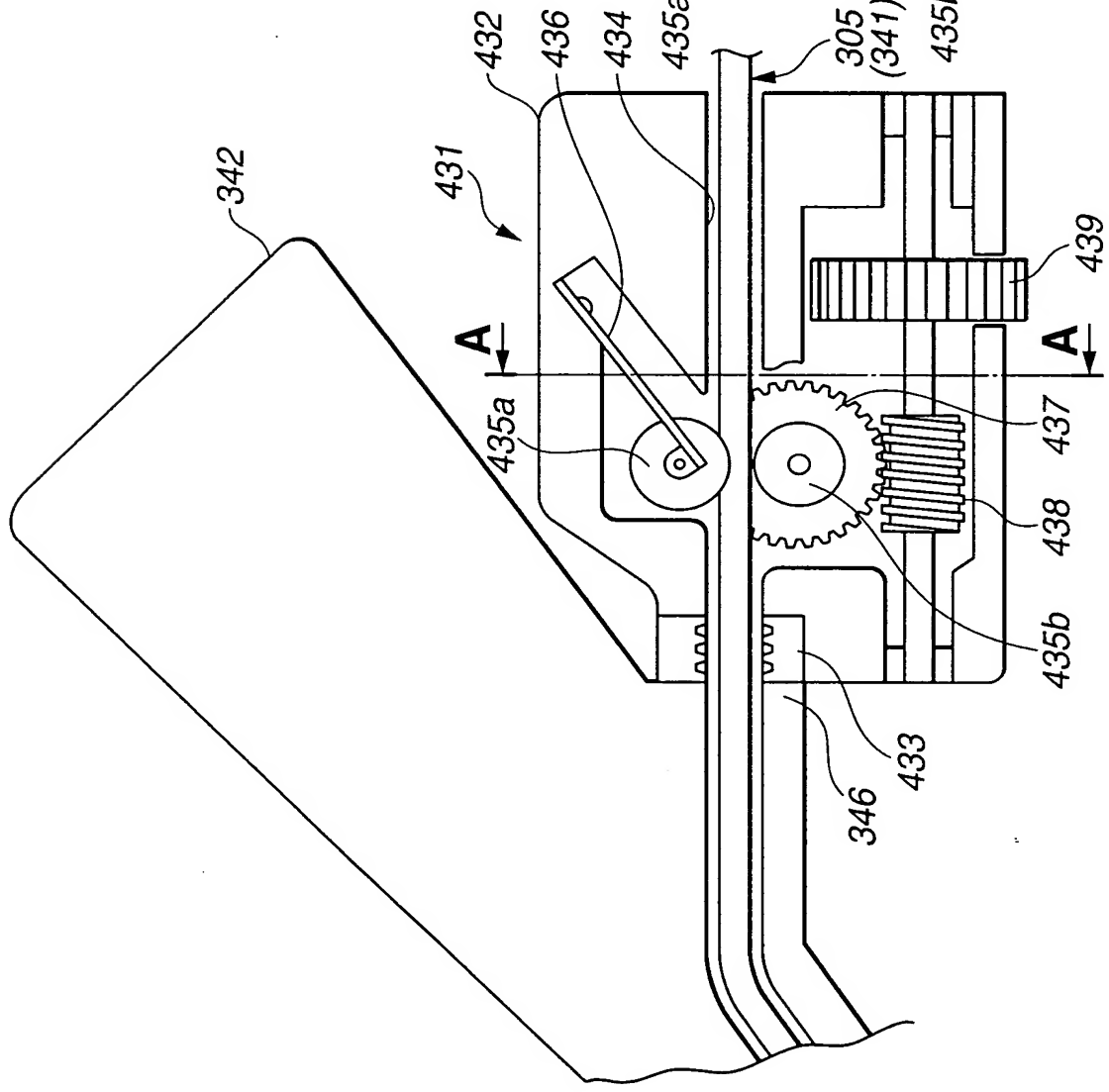


FIG. 87B

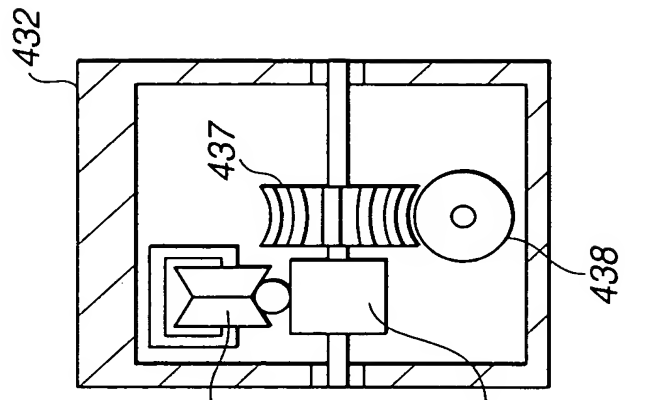


FIG. 88B

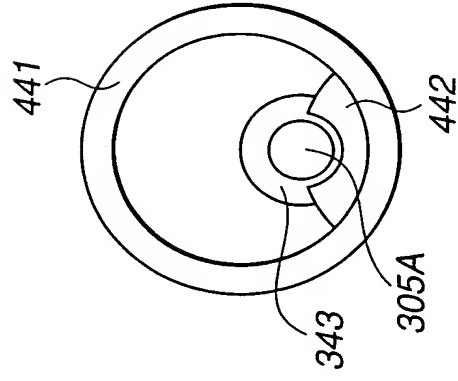


FIG. 88A

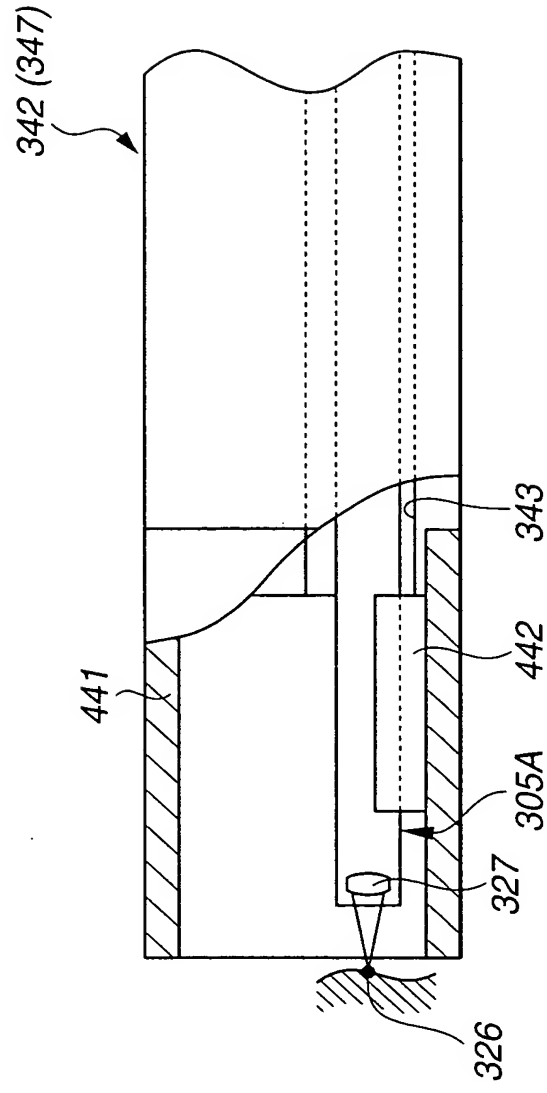


FIG.89

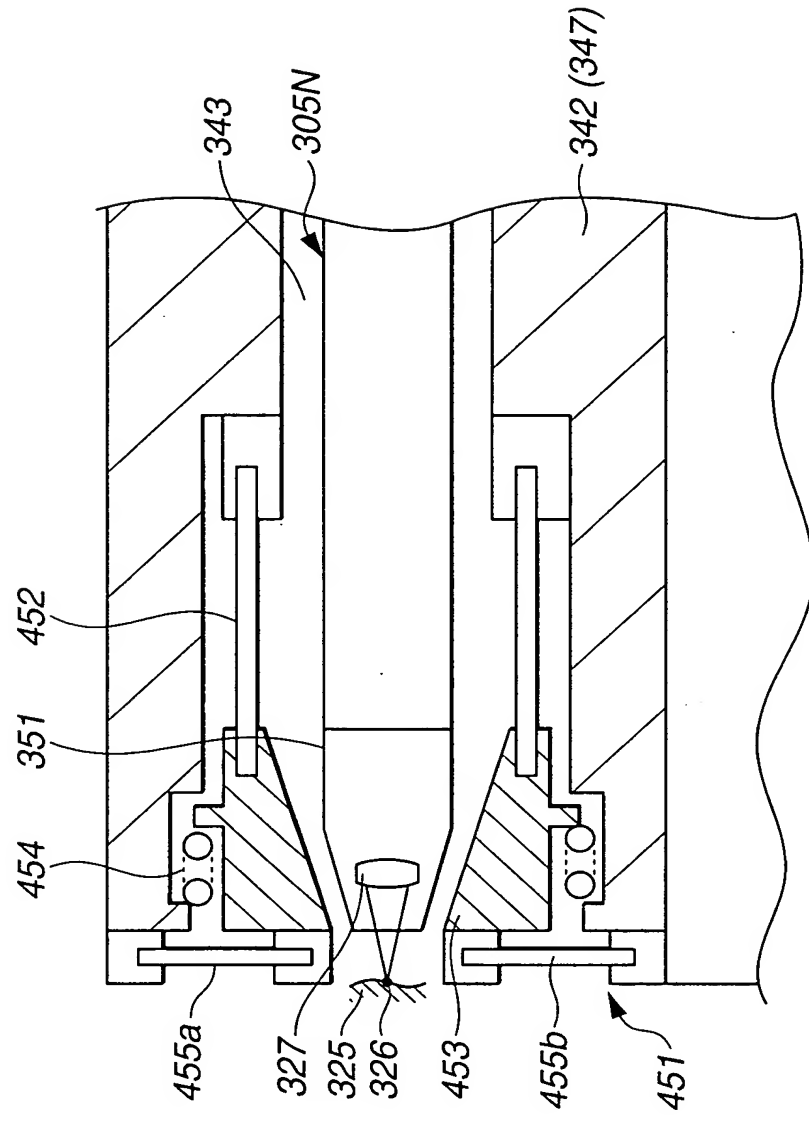


FIG. 90

